

CAS ONLINE PRINTOUT

=> d his

(FILE 'HOME' ENTERED AT 07:36:41 ON 18 OCT 2007)

FILE 'CASREACT' ENTERED AT 07:37:09 ON 18 OCT 2007

L1 STRUCTURE UPLOADED

L2 17 S L1

L3 0 S FCRDREF

L4 628 S L1 FUL

L5 26908 S PALLADIUM

L6 68 S L5 AND L4

FILE 'REGISTRY' ENTERED AT 07:41:31 ON 18 OCT 2007

E CARBON DIOXIDE/CN

L7 1 S E3

FILE 'CASREACT' ENTERED AT 07:41:56 ON 18 OCT 2007

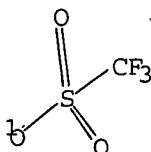
L8 5511 S L7

L9 4 S L8 AND L6

=> d l1

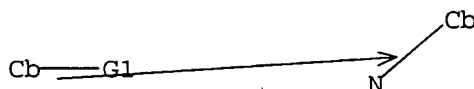
L1 HAS NO ANSWERS

L1 STR



N—Si

G1 X, [01]

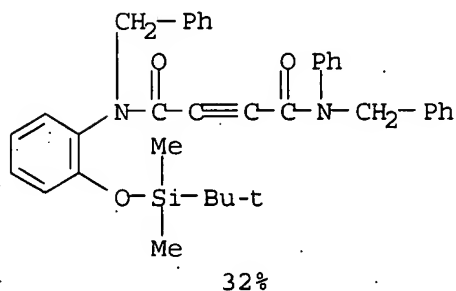
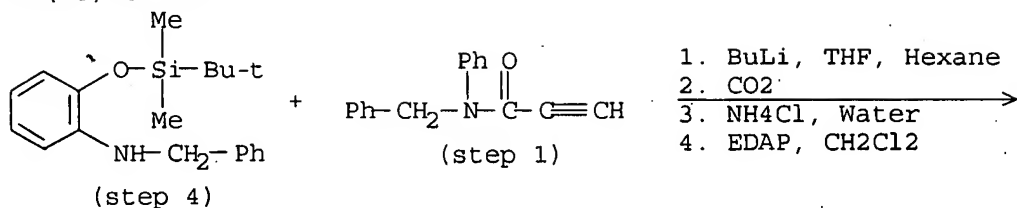


Structure attributes must be viewed using STN Express query preparation.

=> d fcrdref bib abs 1-4 19

L9 ANSWER 1 OF 4 CASREACT COPYRIGHT 2007 ACS on STN

RX(25) OF 241



REF: Journal of Organic Chemistry, 71(7), 2587-2599; 2006

CON: STAGE(1) 0.5 hours, -78 deg C

STAGE(2) 5 minutes, -78 deg C; -78 deg C -> room temperature

STAGE(4) -60 deg C; 2 hours, -60 deg C -> -5 deg C

AN 144:350197 CASREACT

TI Diastereoselection in the formation of spirocyclic oxindoles by the intramolecular Heck reaction

AU Overman, Larry E.; Watson, Donald A.

CS Department of Chemistry, University of California, Irvine, CA, 92697-2025, USA

SO Journal of Organic Chemistry (2006), 71(7), 2587-2599

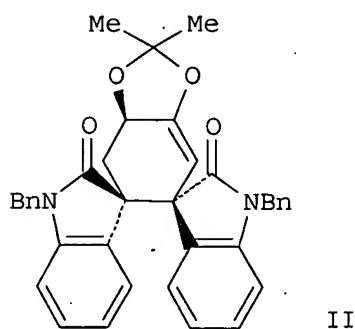
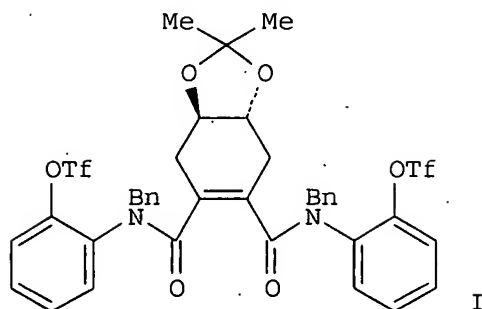
CODEN: JOCEAH; ISSN: 0022-3263

PB American Chemical Society

DT Journal

LA English

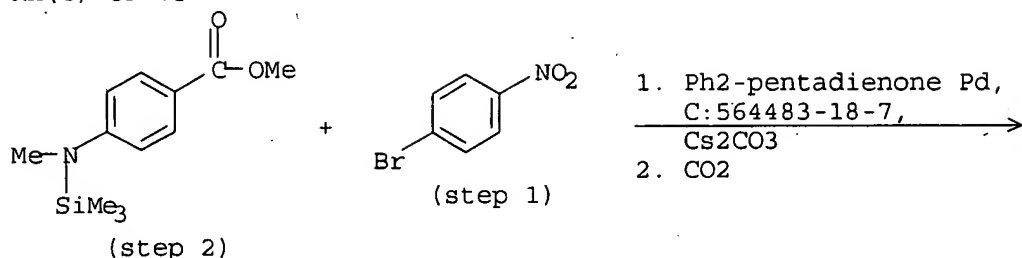
GI



AB Diastereoselective double Heck cyclizations of cyclohexene diamides [e.g., trans-acetonide 1 (I) and its trans-disiloxy analog 3] form contiguous quaternary stereocenters (e.g., II from I), with diastereoselection being controlled by the trans-diol protecting group. In this, the first in a series of two papers, the origin of diastereoselection in the first ring-closure step of these reactions is examined. Nine simplified analogs of 1 and 3 were synthesized and cyclized to discern what structural features are required to realize high diastereoselection in the first intramolecular Heck reaction. These studies show that high stereoselection (>20:1) does not arise from a single structural feature: it is seen only in substrates that contain both a trans-acetonide and a tertiary amide substituent at C2. Two subtle factors appear to be involved: avoidance of eclipsing interactions between the forming C-C bond and the pseudoaxial hydrogen atom at C6 and between the pseudoequatorial hydrogen atom at C6 and the carbonyl carbon of the forming spirooxindole. The vinylic amide substituent that is not involved in the insertion event preferentially adopts a perpendicular conformation, placing the sterically bulky NR₂ over the alkene π bond. Syn-Pentane-like interactions between this substituent and the C3 of the cyclohexene are avoided in the favored insertion topog. These two effects, when combined, produce a highly diastereoselective process. Safety was recommend use of glass-lined steel reactor for preparation of diacid chloride intermediates for Heck cyclization substrates via Diels-Alder reaction.

RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

RX(4) OF 73



REF: Organic & Biomolecular Chemistry, 3(20), 3767-3781; 2005

NOTE: supercritical, green chemistry - solvent, high pressure in second stage, reaction in a sealed high pressure cell, incremental addition of solvent in second stage

CON: STAGE(1) room temperature

STAGE(2) 800 psi; 100 deg C, 800 psi; 800 psi -> 1800 psi;
17 hours, 100 deg C, 1800 psi; 100 deg C -> room temperature

AN 144:6541 CASREACT

TI Palladium catalyzed aryl amination reactions in supercritical carbon dioxide

AU Smith, Catherine J.; Tsang, Melanie W. S.; Holmes, Andrew B.; Danheiser, Rick L.; Tester, Jefferson W.

CS Department of Chemistry, Melville Laboratory, Cambridge, CB2 1EW, UK

SO Organic & Biomolecular Chemistry (2005), 3(20), 3767-3781

CODEN: OBCRAK; ISSN: 1477-0520

PB Royal Society of Chemistry

DT Journal

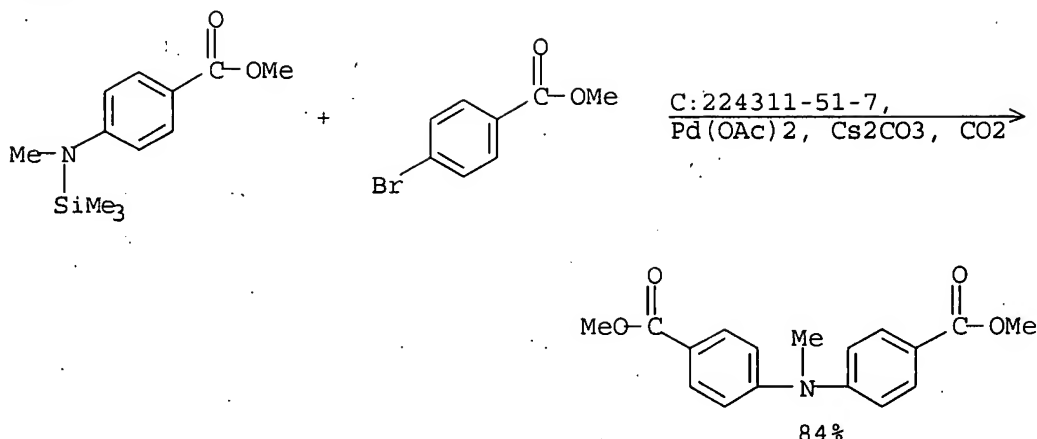
LA English

AB Palladium catalyzed C-N bond formation in supercrit. carbon dioxide has been accomplished. Carbamic acid formation is avoided in part through the use of an N-silylamine as the coupling partner. Employing a catalyst system of Pd₂dba₃ (1 mol%) and 2-dicyclohexylphosphino-2',4',6'-triisopropyl-1,1'-biphenyl (X-Phos) (2 mol%) enabled the catalytic amination of aryl bromides and chlorides with N-silylanilines to be realized in excellent yield. Extension of the methodol. to the N-arylation of N-silyldiarylamines, N-silylazoles and N-silylsulfonamides is reported.

RE.CNT 72 THERE ARE 72 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 3 OF 4 CASREACT COPYRIGHT 2007 ACS on STN

RX(1) OF 24



REF: PCT Int. Appl., 2005090283, 29 Sep 2005

NOTE: high pressure, yield depends on reaction pressure, supercritical
CO₂ used as solvent

CON: 17 hours, 100 deg C, 3000 psi

AN 143:306029 CASREACT

TI Amination of aromatic compounds using transition metal catalysts

IN Holmes, Andrew Bruce; Smith, Catherine Janet; Tsang, Melanie Wing-Sze;
Early, Theresa Rachel; Shute, Richard EdenPA Cambridge University Technical Services Limited, UK; Astrazeneca UK
Limited

SO PCT Int. Appl., 41 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

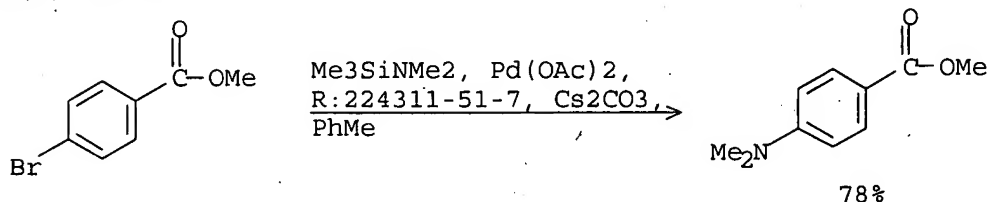
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2005090283	A1	20050929	WO 2005-GB1130	20050318
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1737812	A1	20070103	EP 2005-718110	20050318
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR				
US 2007179315	A1	20070802	US 2007-593212	20070223
PRAI GB 2004-6125		20040318		
WO 2005-GB1130		20050318		
OS MARPAT 143:306029				
AB	A method for synthesizing amines R ₁ NR ₂ R ₃ (R ₁ is optionally substituted aryl; R ₂ is optionally substituted aryl, heterocyclyl, alkyl or sulfonyl; R ₃ is H or optionally substituted alkyl, heterocyclyl or aryl; or R ₂ R ₃ N is optionally substituted heterocyclyl or heteroaryl) comprises reacting R ₁ -L, where L is a labile leaving group, with a silylamine R ₂ R ₃ NSiR ₄ R ₅ R ₆ (R ₄ , R ₅ , R ₆ are independently optionally substituted alkyl, aryl,			

heterocyclyl, hydroxy, halo, amino or alkoxy or two of R1, R2 and R3, together with the silicon atom may form a ring) in compressed carbon dioxide in the presence of a transition metal catalyst and a base. Thus, a stainless steel cell containing Me p-bromobenzoate, Cs₂CO₃, palladium acetate, and di-tert-butylbiphenylphosphine was evacuated and refilled with nitrogen, p-MeO₂CC₆H₄NMeSiMe₃ added, and the cell charged with CO₂ to approx. 760 psi. The cell was heated to 100°C and the pressure adjusted to 3,000 psi by further addition of CO₂. The reaction yielded (p-MeO₂CC₆H₄)₂NMe in 84% yield after 17 h.

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 4 OF 4 CASREACT COPYRIGHT 2007 ACS on STN

RX(1) OF 29



REF: Chemical Communications (Cambridge, United Kingdom), (17), 1976-1977; 2004

CON: 64 hours, 60 deg C

AN 141:366016 CASREACT

TI Palladium catalyzed cross-coupling reactions of silylamines

AU Smith, Catherine J.; Early, Tessa R.; Holmes, Andrew B.; Shute, Richard E.

CS Department of Chemistry, Melville Laboratory for Polymer Synthesis, Cambridge, CB2 1EW, UK

SO Chemical Communications (Cambridge, United Kingdom) (2004), (17), 1976-1977

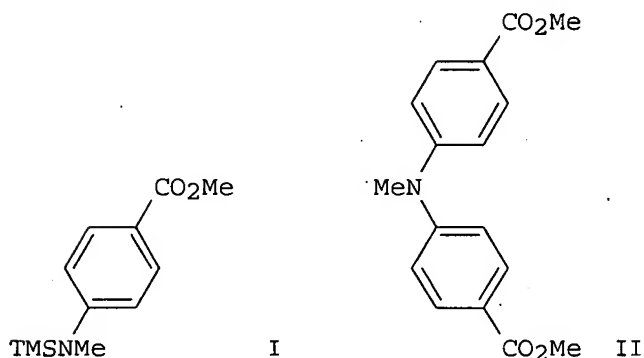
CODEN: CHCOFS; ISSN: 1359-7345

PB Royal Society of Chemistry

DT Journal

LA English

GI



AB The palladium-catalyzed formation of C-N bonds to produce a range of aryl amines in supercrit. carbon dioxide is reported; carbamic acid formation is avoided in part by the use of N-silylamines as surrogates for the free amine. For example, the aromatic amination (coupling

CAS ONLINE PRINTOUT

reaction) of 4-[methyl(trimethylsilyl)amino]benzoic acid Me ester (I) with 4-bromobenzoic acid Me ester gave 4,4'-(methylinino)bis[benzoic acid] Me ester (II).

RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

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L6 68 S L5 AND L4

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L7 1 S E3

FILE 'CASREACT' ENTERED AT 07:41:56 ON 18 OCT 2007

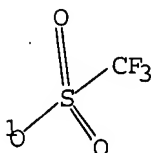
L8 5511 S L7

L9 4 S L8 AND L6

=> d l1

L1 HAS NO ANSWERS

L1 STR



N—Si



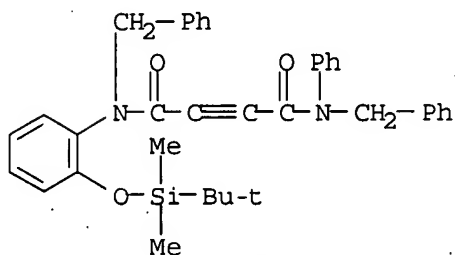
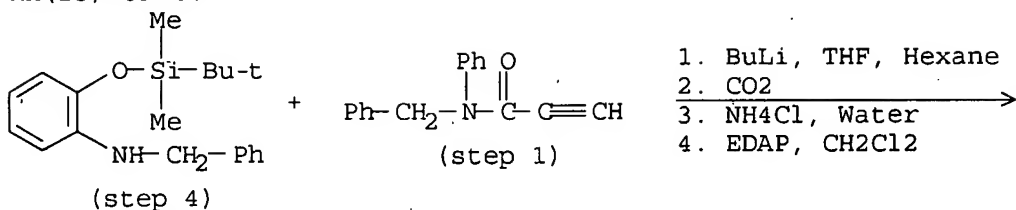
G1 X, [01]

Structure attributes must be viewed using STN Express query preparation.

=> d fcrdref abs 1-4

L9 ANSWER 1 OF 4 CASREACT COPYRIGHT 2007 ACS on STN

RX(25) OF 241



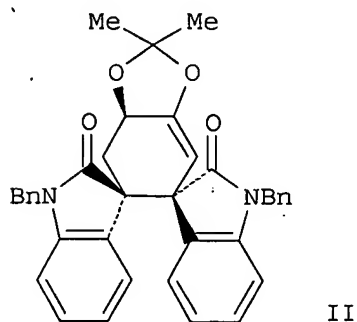
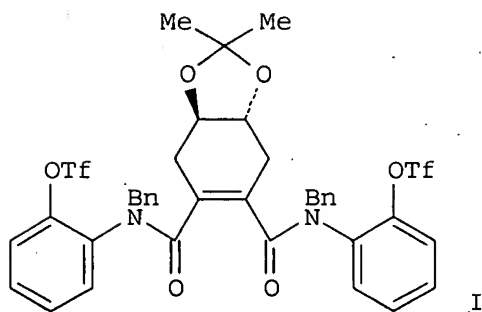
REF: Journal of Organic Chemistry, 71(7), 2587-2599; 2006

CON: STAGE(1) 0.5 hours, -78 deg C

STAGE(2) 5 minutes, -78 deg C; -78 deg C -> room temperature

STAGE(4) -60 deg C; 2 hours, -60 deg C -> -5 deg C

GI

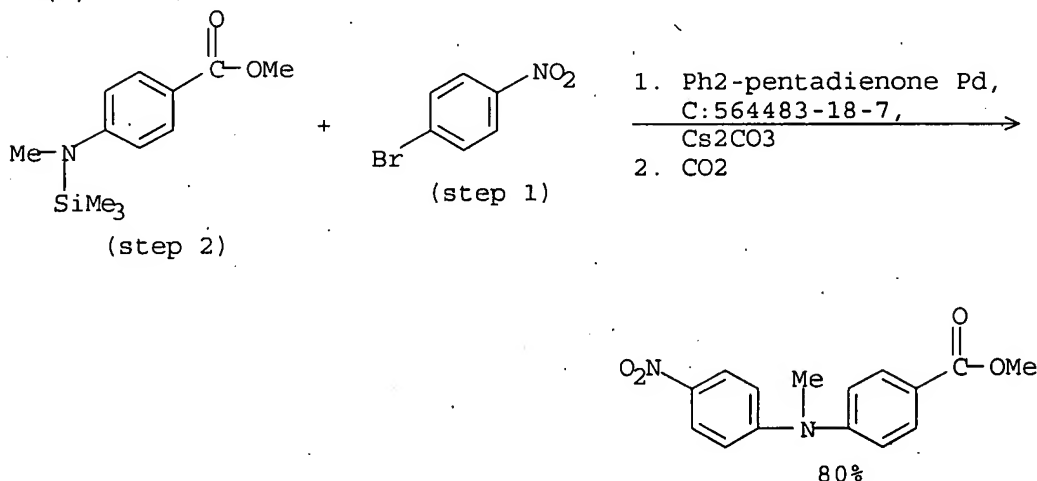


AB Diastereoselective double Heck cyclizations of cyclohexene diamides [e.g., trans-acetonide 1 (I) and its trans-disiloxy analog 3] form contiguous quaternary stereocenters (e.g., II from I), with diastereoselection being

controlled by the trans-diol protecting group. In this, the first in a series of two papers, the origin of diastereoselection in the first ring-closure step of these reactions is examined. Nine simplified analogs of 1 and 3 were synthesized and cyclized to discern what structural features are required to realize high diastereoselection in the first intramol. Heck reaction. These studies show that high stereoselection (>20:1) does not arise from a single structural feature: it is seen only in substrates that contain both a trans-acetonide and a tertiary amide substituent at C2. Two subtle factors appear to be involved: avoidance of eclipsing interactions between the forming C-C bond and the pseudoaxial hydrogen atom at C6 and between the pseudoequatorial hydrogen atom at C6 and the carbonyl carbon of the forming spirooxindole. The vinylic amide substituent that is not involved in the insertion event preferentially adopts a perpendicular conformation, placing the sterically bulky NR₂ over the alkene π bond. Syn-Pentane-like interactions between this substituent and the C3 of the cyclohexene are avoided in the favored insertion topog. These two effects, when combined, produce a highly diastereoselective process. Safety was recommend use of glass-lined steel reactor for preparation of diacid chloride intermediates for Heck cyclization substrates via Diels-Alder reaction.

L9 ANSWER 2 OF 4 CASREACT COPYRIGHT 2007 ACS on STN

RX(4) OF 73



REF: Organic & Biomolecular Chemistry, 3(20), 3767-3781; 2005

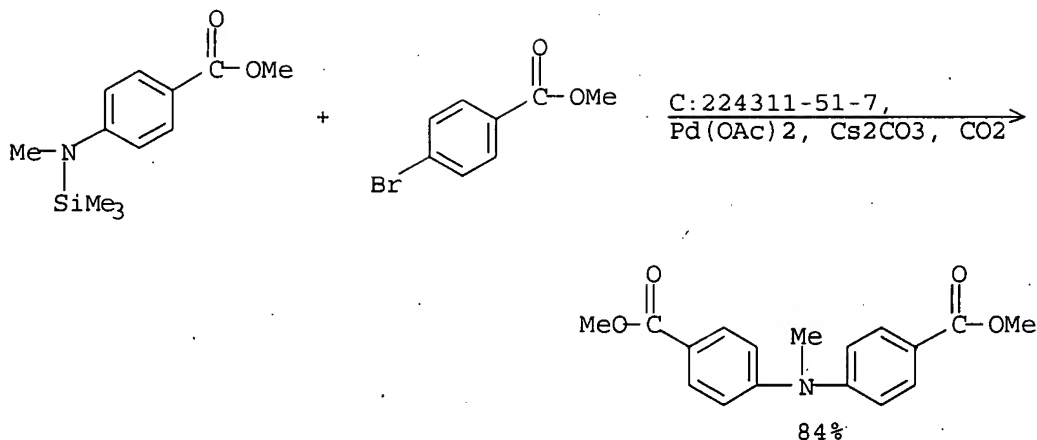
NOTE: supercritical, green chemistry - solvent, high pressure in second stage, reaction in a sealed high pressure cell, incremental addition of solvent in second stage

CON: STAGE(1) room temperature
 STAGE(2) 800 psi; 100 deg C, 800 psi; 800 psi -> 1800 psi;
 17 hours, 100 deg C, 1800 psi; 100 deg C -> room temperature

AB Palladium catalyzed C-N bond formation in supercrit. carbon dioxide has been accomplished. Carbamic acid formation is avoided in part through the use of an N-silylamine as the coupling partner. Employing a catalyst system of Pd₂dba₃ (1 mol%) and 2-dicyclohexylphosphino-2',4',6'-triisopropyl-1,1'-biphenyl (X-Phos) (2 mol%) enabled the catalytic amination of aryl bromides and chlorides with N-silylanilines to be realized in excellent yield. Extension of the methodol. to the N-arylation of N-silyldiarylamines, N-silylazoles and N-silylsulfonamides is reported.

L9 ANSWER 3 OF 4 CASREACT COPYRIGHT 2007 ACS on STN

RX(1) OF 24



REF: PCT Int. Appl., 2005090283, 29 Sep 2005

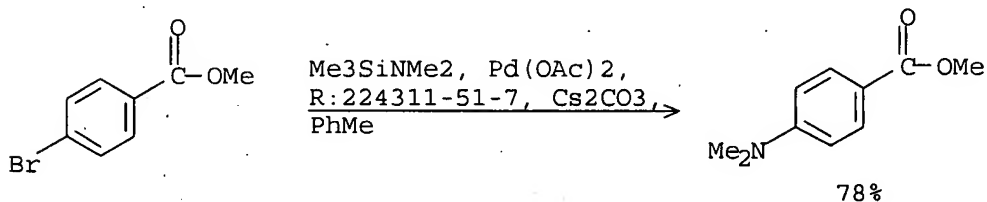
NOTE: high pressure, yield depends on reaction pressure, supercritical CO₂ used as solvent

CON: 17 hours, 100 deg C, 3000 psi

AB A method for synthesizing amines R₁NR₂R₃ (R₁ is optionally substituted aryl; R₂ is optionally substituted aryl, heterocyclyl, alkyl or sulfonyl; R₃ is H or optionally substituted alkyl, heterocyclyl or aryl; or R₂R₃N is optionally substituted heterocyclyl or heteroaryl) comprises reacting R₁-L, where L is a labile leaving group, with a silylamine R₂R₃NSiR₄R₅R₆ (R₄, R₅, R₆ are independently optionally substituted alkyl, aryl, heterocyclyl, hydroxy, halo, amino or alkoxy or two of R₁, R₂ and R₃, together with the silicon atom may form a ring) in compressed carbon dioxide in the presence of a transition metal catalyst and a base. Thus, a stainless steel cell containing Me p-bromobenzoate, Cs₂CO₃, palladium acetate, and di-tert-butylbiphenylphosphine was evacuated and refilled with nitrogen, p-MeO₂CC₆H₄NMeSiMe₃ added, and the cell charged with CO₂ to approx. 760 psi. The cell was heated to 100°C and the pressure adjusted to 3,000 psi by further addition of CO₂. The reaction yielded (p-MeO₂CC₆H₄)₂NMe in 84% yield after 17 h.

L9 ANSWER 4 OF 4 CASREACT COPYRIGHT 2007 ACS on STN

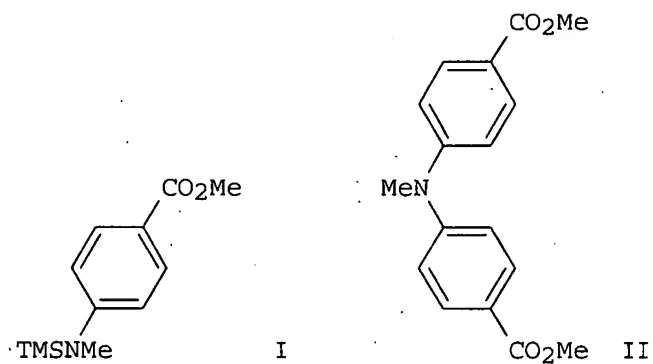
RX(1) OF 29



REF: Chemical Communications (Cambridge, United Kingdom), (17), 1976-1977; 2004

CON: 64 hours, 60 deg C

GI



AB The palladium-catalyzed formation of C-N bonds to produce a range of aryl amines in supercrit. carbon dioxide is reported; carbamic acid formation is avoided in part by the use of N-silylamines as surrogates for the free amine. For example, the aromatic amination (coupling reaction) of 4-[methyl(trimethylsilyl)amino]benzoic acid Me ester (I) with 4-bromobenzoic acid Me ester gave 4,4'-(methylimino)bis[benzoic acid] Me ester (II).

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L1 STRUCTURE UPLOADED

L2 17 S L1

L3 0 S FCRDREF

L4 628 S L1 FUL

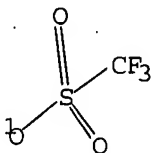
L5 26908 S PALLADIUM

L6 68 S L5 AND L4

=> d l1

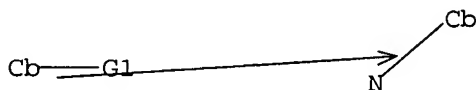
L1 HAS NO ANSWERS

L1 STR



N—Si

G1 X, [@1]

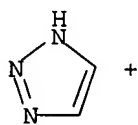


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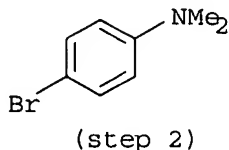
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L6 ANSWER 1 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

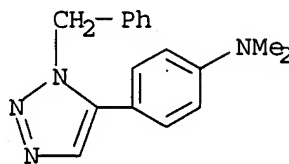
RX(25) OF 28 - 2 STEPS



+



1.1. PhCH2Br,
Me3SiN:CMesSiMe3,
NMEP
1.2. Water
2. Pd(OAc)2, Bu4N.OAc,
NMEP



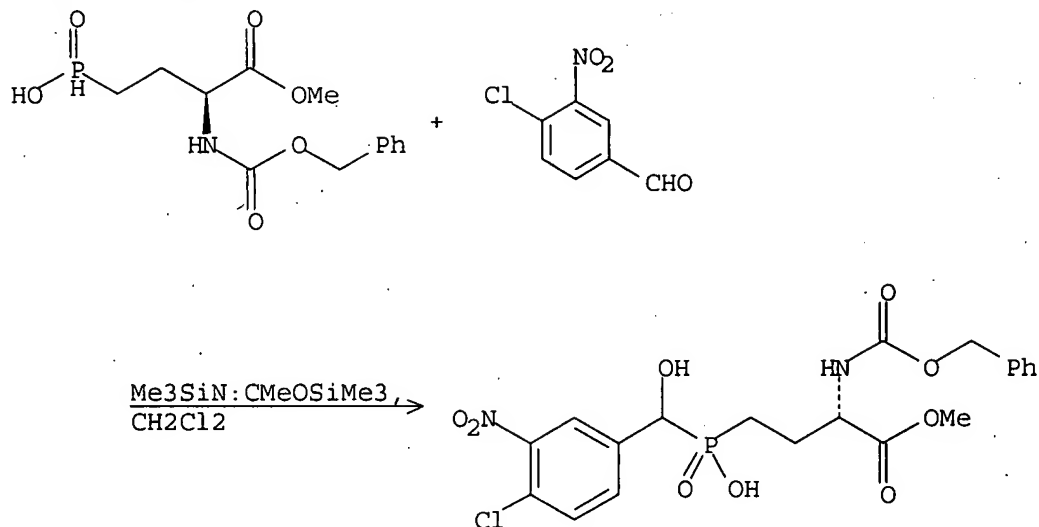
83%

REF: Organic Letters, 9(12), 2333-2336; 2007

CON: STEP(1) overnight, 100 deg C

STEP(2) 100 deg C

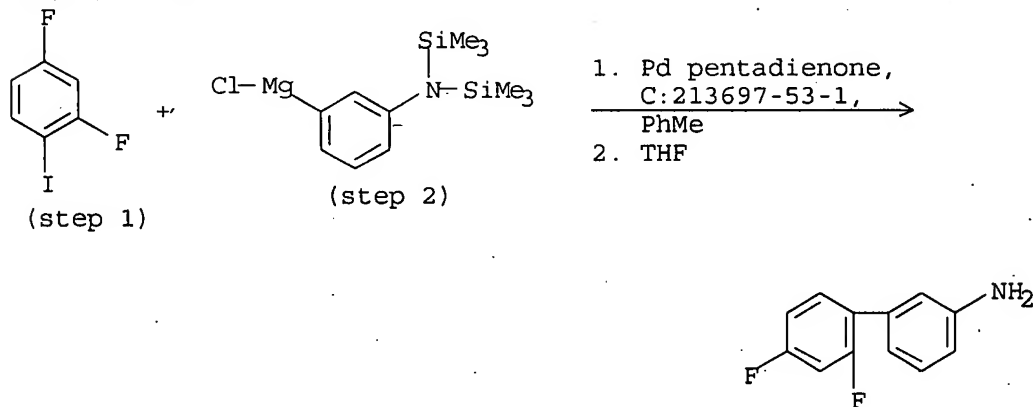
RX(41) OF 244



REF: PCT Int. Appl., 2007052169, 10 May 2007

CON: STAGE(1) 0 deg C; 0 deg C -> room temperature; overnight, room temperature

RX(10) OF 23



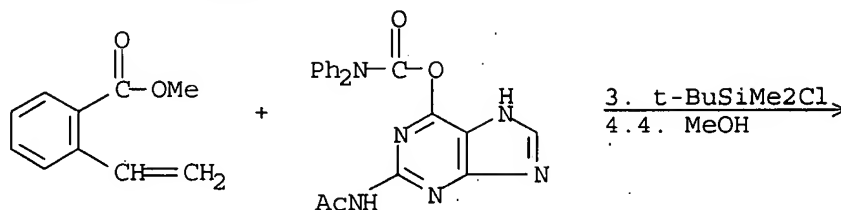
REF: Journal of the American Chemical Society, 129(13), 3844-3845; 2007

NOTE: Kumada-Corriu Cross-Coupling reaction

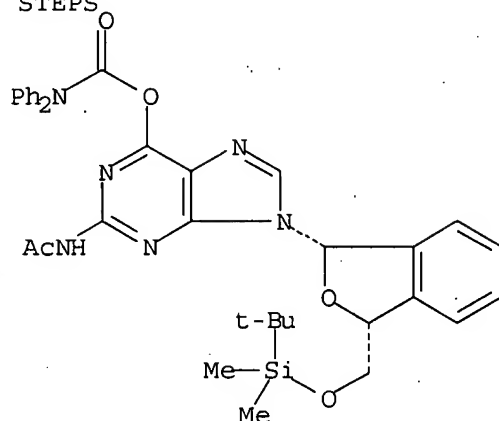
CON: STAGE(1) 20 minutes, 60 deg C; 60 deg C -> -20 deg C

STAGE(2) 14 hours, -20 deg C; -20 deg C -> room temperature

RX(68) OF 91 - 5 STEPS



RX(68) OF 91 - 5 STEPS



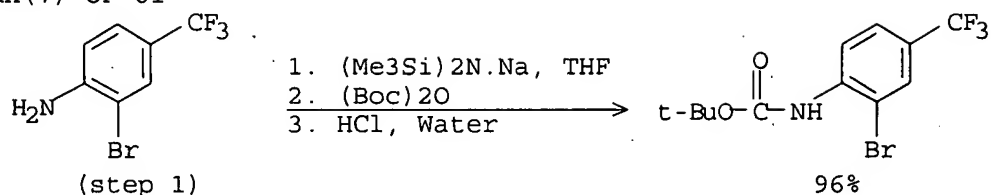
stereoisomers
20%

REF: Chinese Journal of Chemistry, 24(4), 504-508; 2006

NOTE: 2) alternate reaction with lower yield shown, 4) 78% overall yield in five steps from methyl-2-iodobenzoate, Dowex 50W (H⁺) form used in stage 4, 5) stereoselective, regioselective

CON: STEP(1) 12 hours, room temperature
STEP(2.1) 1 hour, room temperature
STEP(2.2) neutralized
STEP(3) 6 hours, room temperature
STEP(4.1) -45 deg C; 1 hour, -45 deg C
STEP(4.2) 0.5 hours, room temperature
STEP(4.3) 1 hour, room temperature
STEP(4.4) 1 hour, room temperature
STEP(5.1) 0.5 hours, 80 deg C
STEP(5.2) 0 deg C; 1 hour; room temperature

RX(7) OF 61



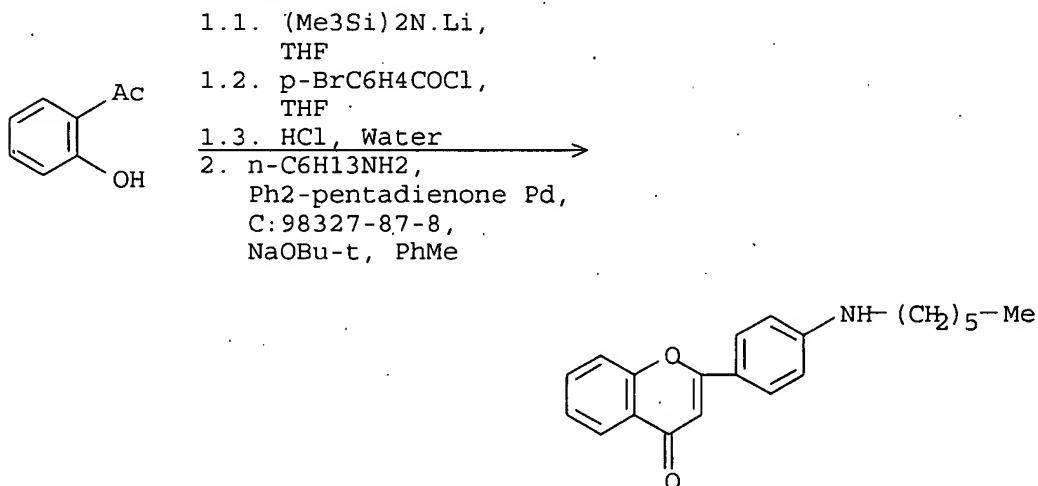
REF: Synthesis, (22), 3895-3901; 2006

CON: STAGE(1) 15 minutes, room temperature

STAGE(2) overnight, room temperature

L6 ANSWER 6 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(33) OF 55 - 2 STEPS



REF: Chemical Communications (Cambridge, United Kingdom), (46), 4814-4816; 2006

NOTE: 2) Buchwald-Hartwig amination, microwave irradiation

CON: STEP(1.1) 0.5 hours, -78 deg C; 2 hours, -20 deg C;

-20 deg C -> -78 deg C

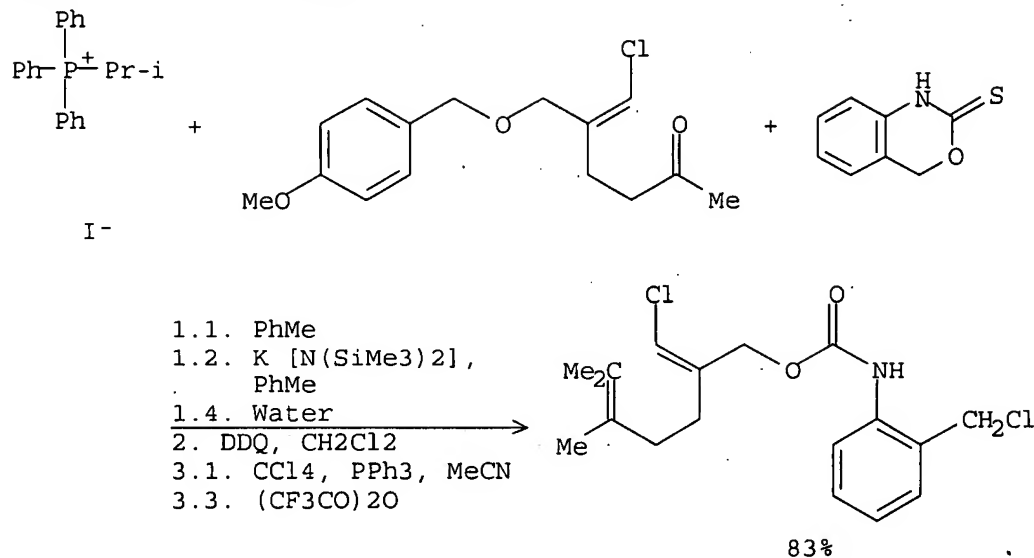
STEP(1.2) 1 hour, -78 deg C; 2 hours, room temperature

STEP(1.3) cooled

STEP(2) 15 minutes, 110 deg C

L6 ANSWER 7 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(36) OF 81 - 3 STEPS



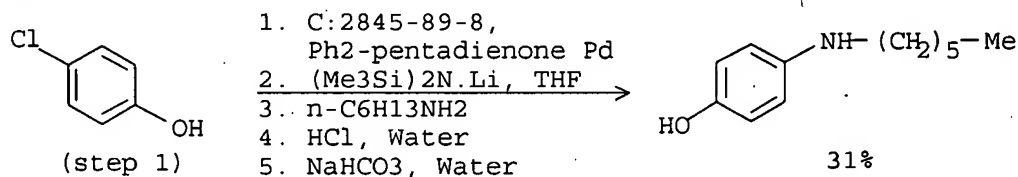
REF: European Journal of Organic Chemistry, (21), 4916-4923; 2006

NOTE: 2) pH=7 buffer used in first stage

CON: STEP(1.1) room temperature -> 0 deg C
 STEP(1.2) 30 minutes, 0 deg C
 STEP(1.3) 16 hours, room temperature
 STEP(2) 60 minutes, room temperature, pH 7
 STEP(3.1) 3 hours, 50 deg C; 50 deg C -> 0 deg C
 STEP(3.2) 40 hours, 50 deg C; cooled
 STEP(3.3) 4 hours, room temperature

L6 ANSWER 8 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(1) OF 33



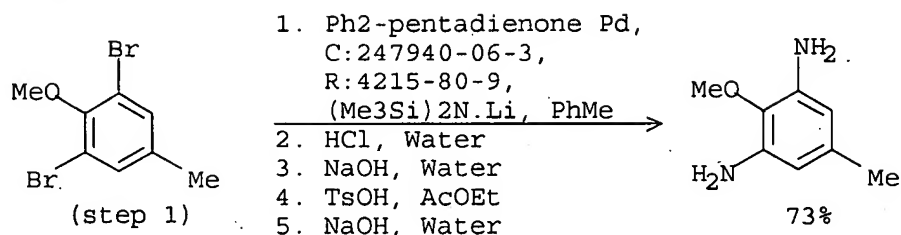
REF: Angewandte Chemie, International Edition, 45(39), 6523-6527; 2006

NOTE: chemoselective

CON: STAGE(1) room temperature
 STAGE(2) 5 minutes, room temperature
 STAGE(3) 24 hours, 40 deg C; 40 deg C -> room temperature
 STAGE(4) 5 minutes, room temperature
 STAGE(5) room temperature, pH 7

L6 ANSWER 9 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(1) OF 9



REF: U.S. Pat. Appl. Publ., 2006258888, 16 Nov 2006

CON: STAGE(1) 17 hours, room temperature -> 100 deg C;
100 deg C -> 25 deg C

STAGE(2) 5 minutes, room temperature

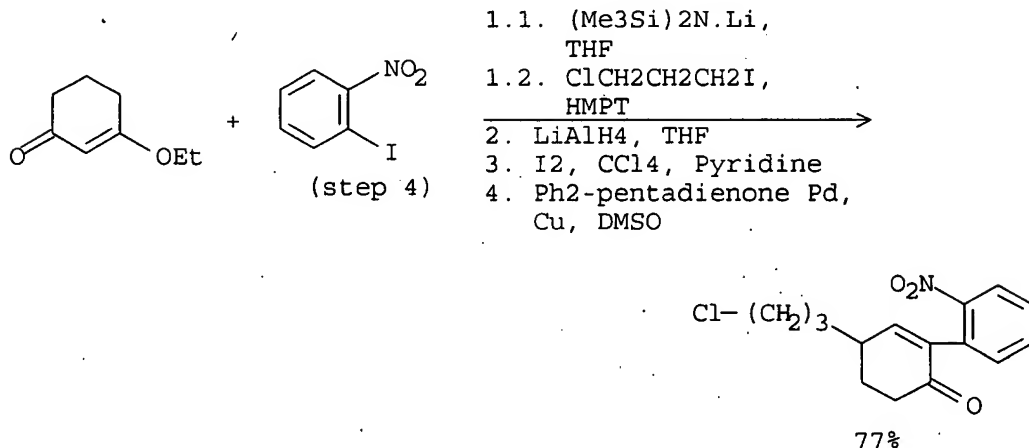
STAGE(3) 5 minutes, room temperature, pH 12

STAGE(4) room temperature

STAGE(5) room temperature, pH 12

L6 ANSWER 10 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(143) OF 450 - 4 STEPS



REF: Australian Journal of Chemistry, 58(10), 722-737; 2005

NOTE: 1) regioselective, 2) exothermic, 3) regioselective, 4) Ullmann cross-coupling reaction

CON: STEP(1.1) room temperature -> -30 deg C; 0.5 hours, -30 deg C

STEP(1.2) -30 deg C; 16 hours, -30 deg C -> 18 deg C

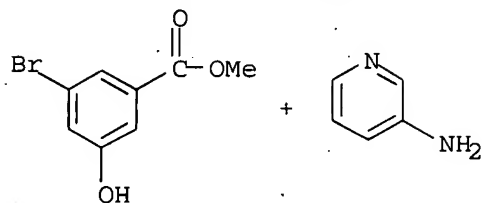
STEP(2.1) 0 deg C; 0.5 hours, 18 deg C

STEP(3.1) 18 deg C; 16 hours, 18 deg C

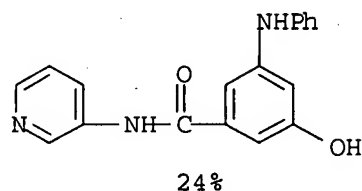
STEP(4.1) 2 hours, 70 deg C; 70 deg C -> 18 deg C

L6 ANSWER 11 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(39) OF 61 - 2 STEPS



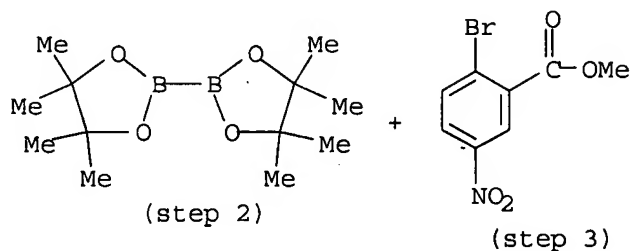
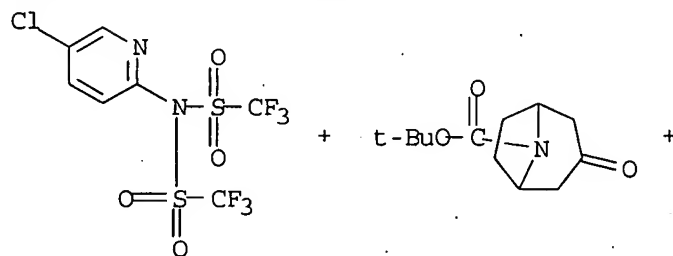
1. $(\text{Me}_3\text{Si})_2\text{N} \cdot \text{Li}$, THF
- 2.1. PhNH_2 ,
 $\xrightarrow{\text{Ph}_2\text{-pentadienone Pd,}}$
 C:161265-03-8,
 Cs_2CO_3 , Dioxane
- 2.2. $\text{F}_3\text{CCO}_2\text{H}$, CH_2Cl_2



REF: Tetrahedron Letters, 47(28), 4897-4901; 2006
 NOTE: 1) combinatorial, solid-supported reaction, 2) combinatorial, solid-supported reaction
 CON: STEP(1) 3 hours, 60 deg C
 STEP(2.1) 16 hours, 60 deg C
 STEP(2.2) 3 minutes, room temperature

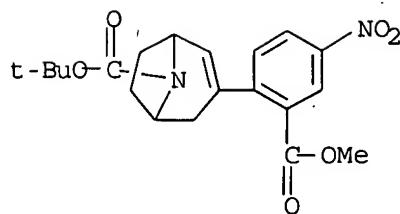
L6 ANSWER 12 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(40) OF 52 - 3 STEPS



RX(40) OF 52 - 3 STEPS

- 1.1. K [N(SiMe₃)₂],
THF, PhMe
2. (Ph₂P)₂-ferrocene,
C:72287-26-4, AcOK,
Dioxane
3. C:72287-26-4,
K₂CO₃, EtOH, DMF



63%

REF: Canadian Journal of Chemistry, 84(4), 555-560; 2006

NOTE: 3) Suzuki-Miyaura coupling reaction

CON: STEP(1.1) 30 minutes, -78 deg C; 3.5 hours, -78 deg C

STEP(1.2) 4 hours, -78 deg C; overnight,

-78 deg C -> room temperature

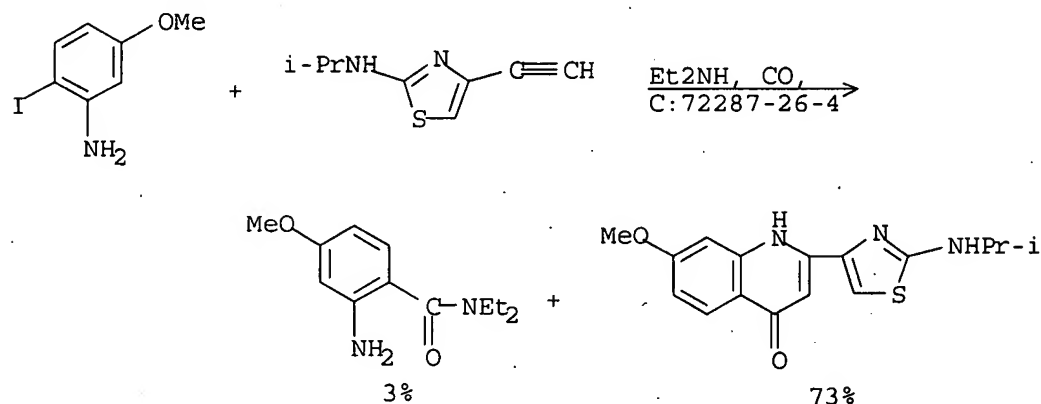
STEP(2.1) 20 minutes, room temperature; 8 - 10 hours, 80 deg C

STEP(3.1) 5 - 10 minutes, room temperature; 3 - 16 hours,

100 deg C

L6 ANSWER 13 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(8) OF 30



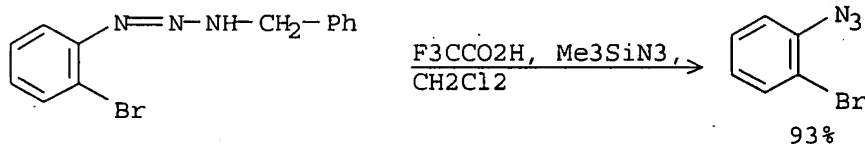
REF: Journal of Organic Chemistry, 71(13), 5031-5034; 2006

NOTE: high pressure, optimization study, optimized on palladium catalyst and reaction conditions

CON: 6 hours, 120 deg C, 250 psi

L6 ANSWER 14 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(7) OF 148



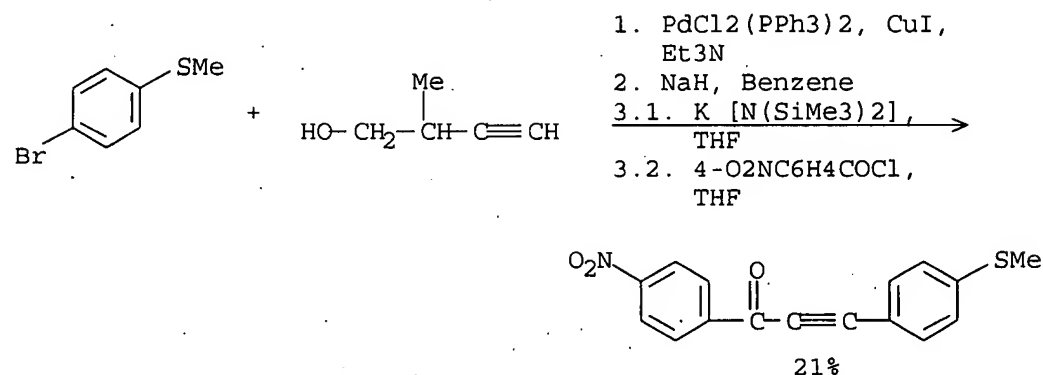
REF: European Journal of Organic Chemistry, (8), 1886-1898; 2006

NOTE: solid-supported reactant

CON: 30 minutes, room temperature

L6 ANSWER 15 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(140) OF 260 - 3 STEPS



REF: Journal of Medicinal Chemistry, 49(5), 1668-1683; 2006

CON: STEP(1.1) 25 deg C; 6 hours, 70 - 75 deg C

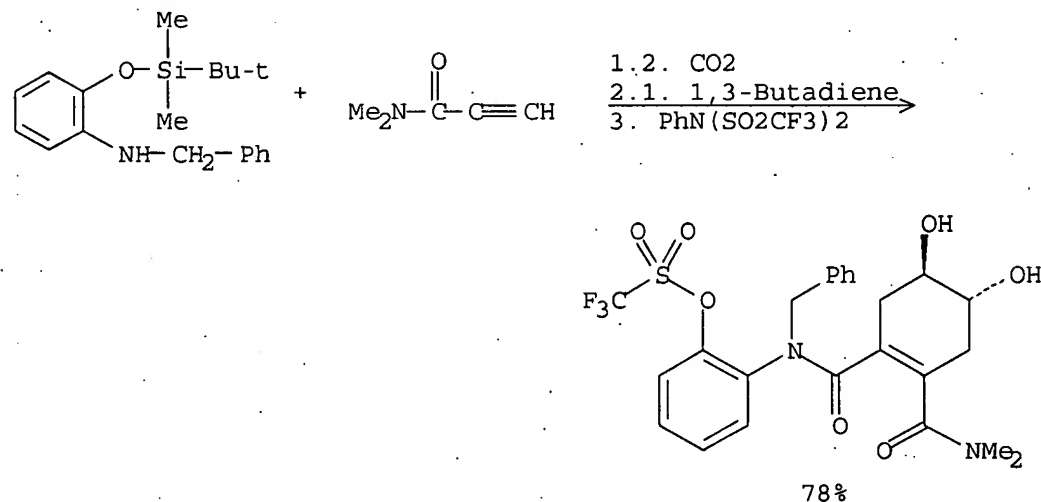
STEP(2) 1 hour, 105 - 110 deg C

STEP(3.1) -78 deg C; 3 minutes, -78 deg C

STEP(3.2) -78 deg C; -78 deg C -> room temperature; overnight, room temperature

L6 ANSWER 16 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(157) OF 241 - 4 STEPS



REF: Journal of Organic Chemistry, 71(7), 2587-2599; 2006

CAS ONLINE PRINTOUT

NOTE: 2) safety, Diels-Alder reaction, 4) stereoselective

CON: STEP(1.1) 0.5 hours, -78 deg C

STEP(1.2) 5 minutes, -78 deg C; -78 deg C -> room temperature

STEP(1.4) 1 hour, -60 deg C -> -5 deg C

STEP(2.1) -78 deg C; -78 deg C -> room temperature; 48 hours, room temperature

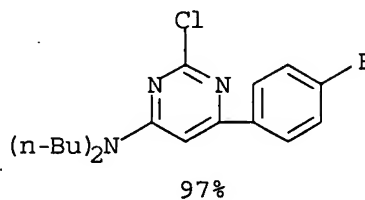
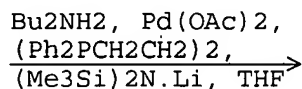
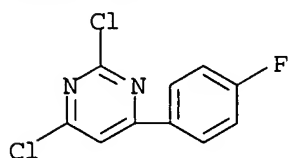
STEP(3) 1 hour, room temperature

STEP(4.1) 20 minutes, 0 deg C; 4 hours, room temperature

STEP(4.3) 12 hours, 80 deg C

L6 ANSWER 17 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(2) OF 52



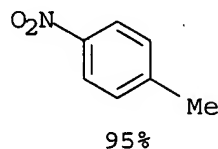
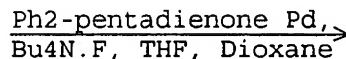
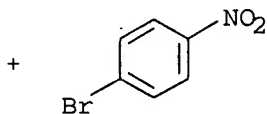
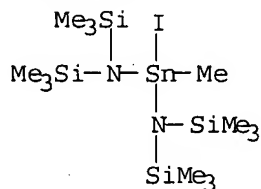
REF: Organic Letters, 8(3), 395-398; 2006

NOTE: regioselective, optimization study, optimized on palladium catalyst, ligand, and catalyst loading

CON: 5 minutes, 0 deg C

L6 ANSWER 18 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

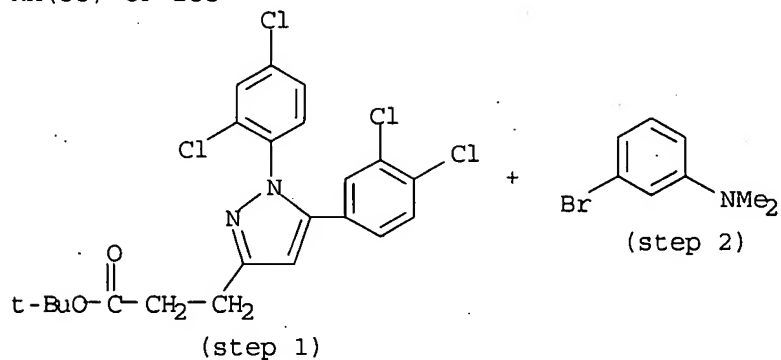
RX(4) OF 24



REF: Chemical Communications (Cambridge, United Kingdom), (1), 97-99; 2006

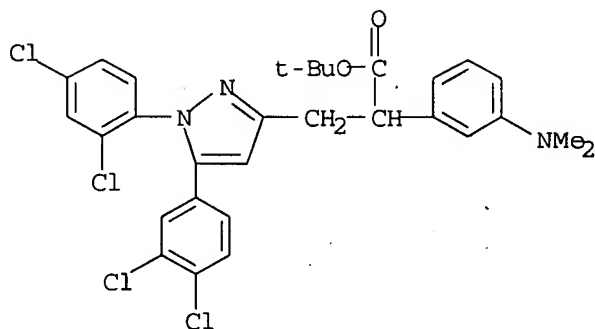
CON: 30 minutes, reflux

RX(55) OF 255



1. C:213697-53-1,
Pd(OAc)₂,
(Me₃Si)₂N.Li, THF, →
PhMe
2. PhMe
3. NH₄Cl, Water

RX(55) OF 255



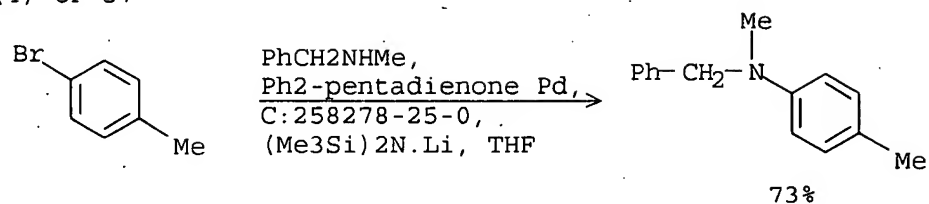
16%

REF: U.S. Pat. Appl. Publ., 2006004195, 05 Jan 2006

CON: STAGE(1) -10 deg C; 0.17 hours, -10 deg C

STAGE(2) room temperature; 3 hours, room temperature -> 80 deg C

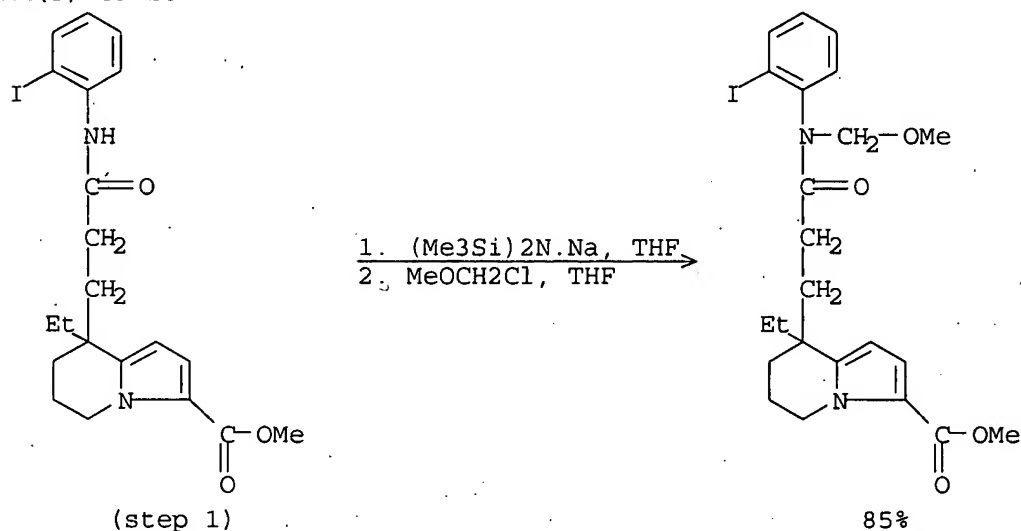
RX(4) OF 37



REF: Journal of Organometallic Chemistry, 690(24-25), 5841-5848;
2005
CON: 24 hours, 22 deg C

L6 ANSWER 21 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

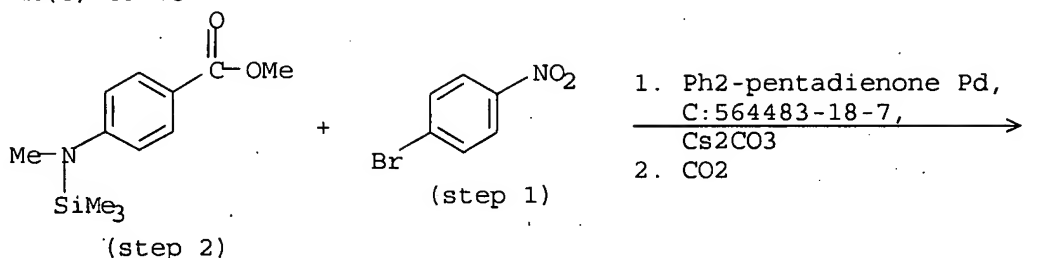
RX(5) OF 28



REF: Organic Letters, 7(23), 5207-5209; 2005
NOTE: key intermediate
CON: STAGE(1) 30 minutes, 0 deg C
STAGE(2) 10 minutes, 0 deg C; 1 hour,
0 deg C -> room temperature

L6 ANSWER 22 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

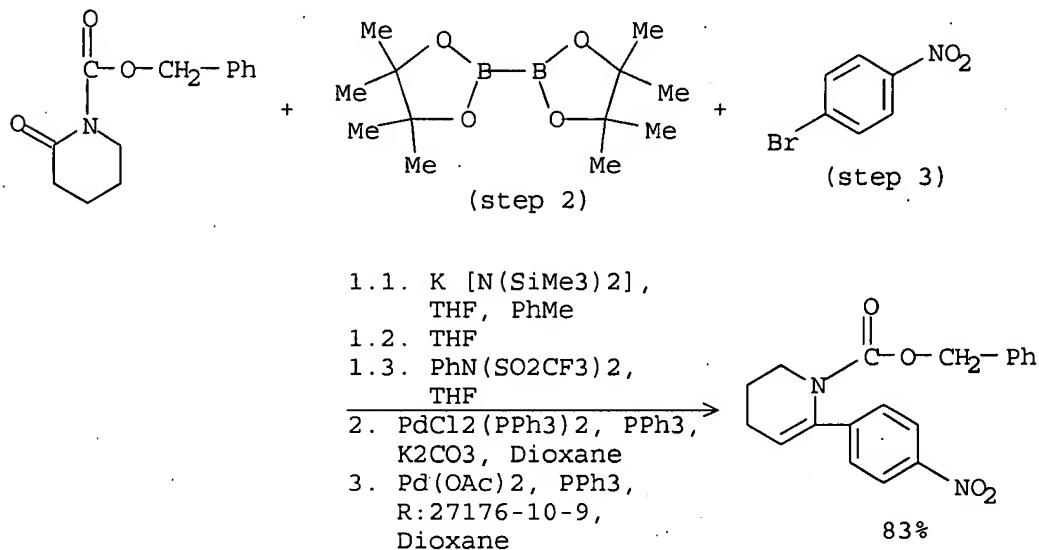
RX(4) OF 73



REF: Organic & Biomolecular Chemistry, 3(20), 3767-3781; 2005
 NOTE: supercritical, green chemistry - solvent, high pressure in second stage, reaction in a sealed high pressure cell, incremental addition of solvent in second stage
 CON: STAGE(1) room temperature
 STAGE(2) 800 psi; 100 deg C, 800 psi; 800 psi -> 1800 psi;
 17 hours, 100 deg C, 1800 psi; 100 deg C -> room temperature

L6 ANSWER 23 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(117) OF 176 - 3 STEPS



REF: Journal of Organic Chemistry, 70(18), 7324-7330; 2005

NOTE: 2) optimization study(optimized on reagent, solvent, temperature), alternate preparations also described

CON: STEP(1.1) room temperature -> -78 deg C
 STEP(1.2) 1.5 hours, -78 deg C
 STEP(1.3) -78 deg C; 1 hour, -78 deg C; 1 hour,
 -78 deg C -> room temperature
 STEP(2) 7 hours, room temperature -> 90 deg C
 STEP(3) 1.5 hours, 100 deg C

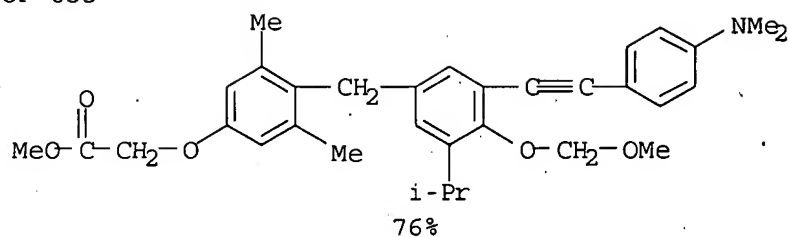
REF: PCT Int. Appl., 2005090283, 29 Sep 2005
NOTE: high pressure, yield depends on reaction pressure, supercritical
CO2 used as solvent
CON: 17 hours, 100 deg C, 3000 psi

L6 ANSWER 25 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

(step 3)

1. $\text{K} [\text{N}(\text{SiMe}_3)_2]$, THF, PhMe
2. 9-BBN-OMe, Hexane
3. $\text{PdCl}_2(\text{PPh}_3)_2$, THF

RX(27) OF 633



REF: Journal of the American Chemical Society, 127(13), 4599-4608; 2005

NOTE: Suzuki-Miyaura reaction third stage

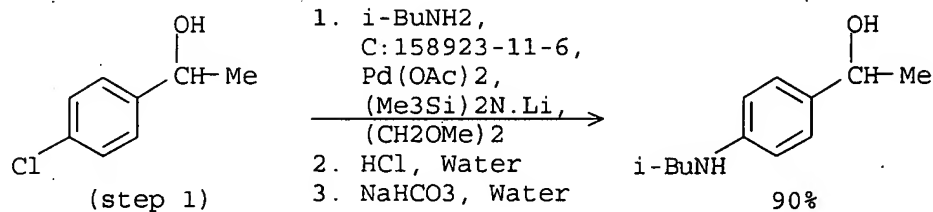
CON: STAGE(1) 30 minutes, -78 deg C

STAGE(2) 2 hours, -78 deg C

STAGE(3) 24 hours, reflux

L6 ANSWER 26 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(50) OF 67



REF: Angewandte Chemie, International Edition, 44(9), 1371-1375, S1371/1-S1371/79; 2005

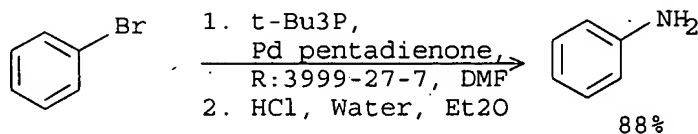
CON: STAGE(1) 18 hours, 100 deg C; 100 deg C -> room temperature

STAGE(2) 5 minutes, room temperature

STAGE(3) room temperature, neutralized

L6 ANSWER 27 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(1) OF 60



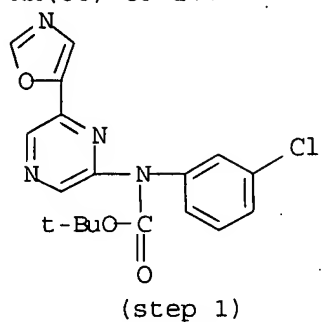
REF: Organic Letters, 7(6), 1169-1172; 2005

CON: STAGE(1) 30 hours, 50 deg C

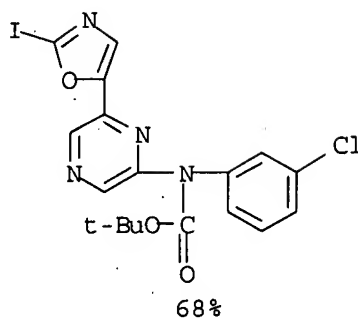
STAGE(2) neutralized

L6 ANSWER 28 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(60) OF 277



1. (Me₃Si)₂N.Li, THF
2. ICH₂CH₂I, THF
3. Na₂S₂O₃

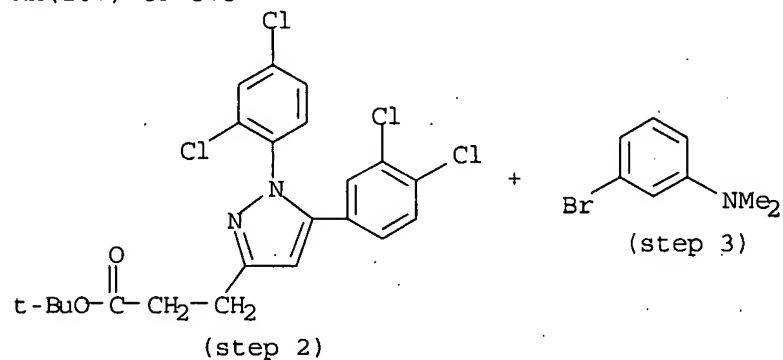


REF: Journal of Medicinal Chemistry, 48(6), 1886-1900; 2005

CON: STAGE(1) -78 deg C; 1 hour, -78 deg C
STAGE(2) 1 hour, -78 deg C

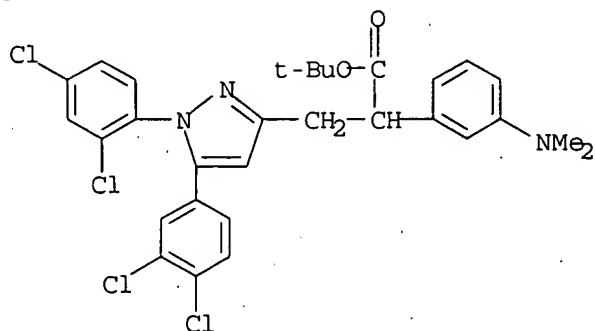
L6 ANSWER 29 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(107) OF 573



1. Pd(OAc)₂,
R: 213697-53-1,
(Me₃Si)₂N.Li, THF,
PhMe
2. PhMe
3. PhMe
4. NH₄Cl, Water

RX(107) OF 573

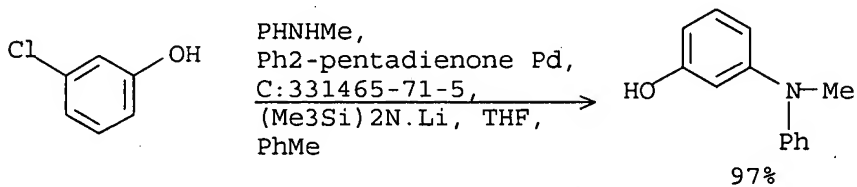


16%

REF: PCT Int. Appl., 2005005393, 20 Jan 2005
 CON: STAGE(1) -10 deg C
 STAGE(2) 10 minutes, -10 deg C
 STAGE(3) -10 deg C -> room temperature;
 room temperature -> 80 deg C; 3 hours, 80 deg C;
 80 deg C -> room temperature
 STAGE(4) room temperature

L6 ANSWER 30 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(2) OF 20

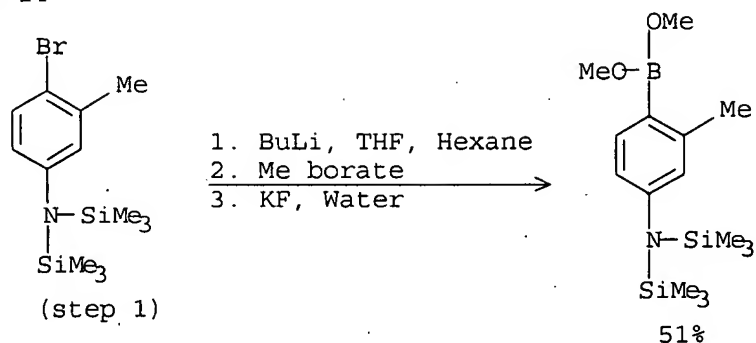


97%

REF: Advanced Synthesis & Catalysis, 346(6), 611-616; 2004
 CON: 29 hours, 100 deg C

L6 ANSWER 31 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

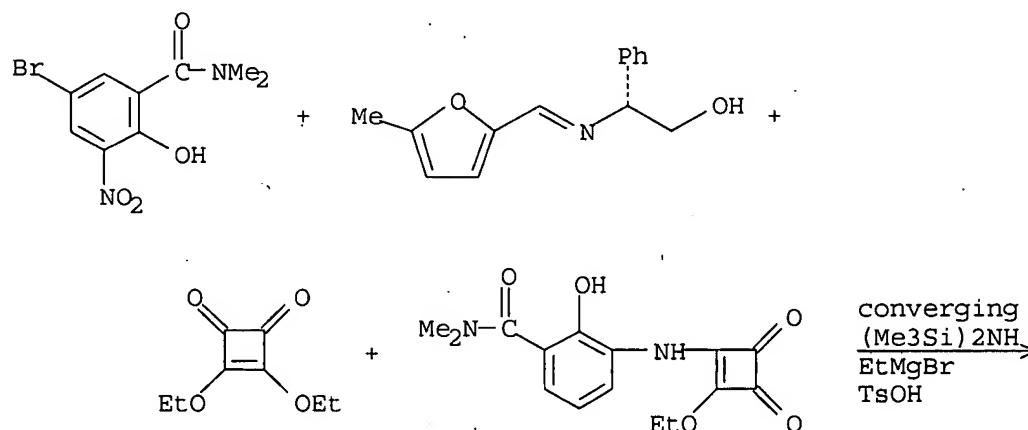
RX(8) OF 14



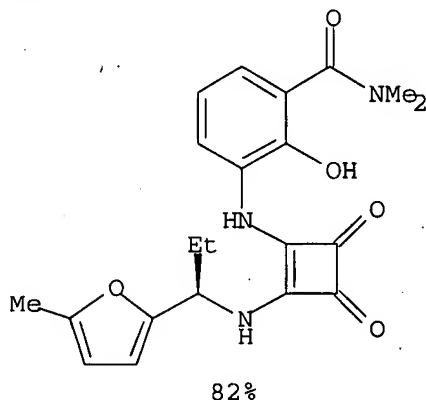
REF: Eur. Pat. Appl., 1479686, 24 Nov 2004
 CON: STAGE(1) 10 minutes, -78 deg C -> -50 deg C
 STAGE(2) 1 hour, -50 deg C
 STAGE(3) room temperature

L6 ANSWER 32 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(46) OF 52 - 7 STEPS



RX(46) OF 52 - 7 STEPS



REF: U.S. Pat. Appl. Publ., 2004209946, 21 Oct 2004

NOTE: workup, workup

CON: STEP(1.1) room temperature; 0.5 hours, room temperature; 2 hours, reflux

STEP(2) <35 deg C

STEP(3) 1 hour

STEP(4.1) room temperature -> 0 deg C; 2 hours, room temperature

STEP(5.1) 1 - 4 hour, 25 deg C

STEP(5.2) 6 - 14 hours, 25 deg C

STEP(6.1) 20 minutes, <30 deg C

STEP(6.2) 12 hours, 65 deg C

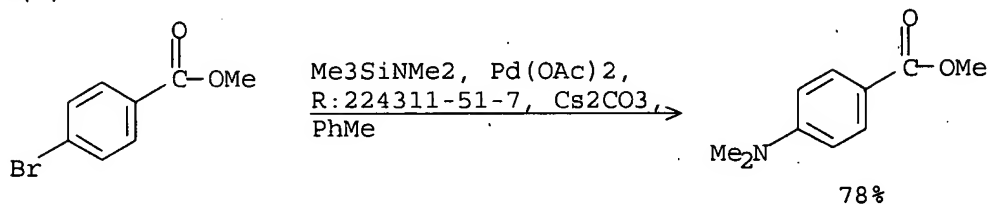
STEP(7.1) 10 hours, room temperature, 105 psi;

room temperature -> 5 deg C

STEP(7.2) 2 hours, 25 deg C

L6 ANSWER 33 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(1) OF 29

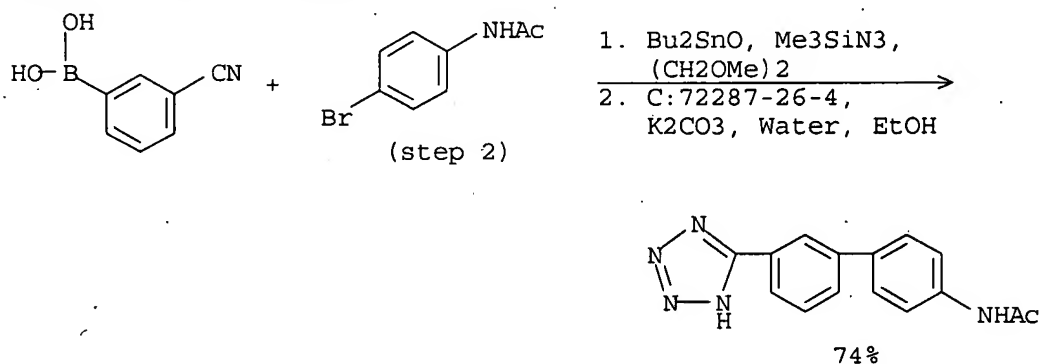


REF: Chemical Communications (Cambridge, United Kingdom), (17), 1976-1977; 2004

CON: 64 hours, 60 deg C

L6 ANSWER 34 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(23) OF 23 - 2 STEPS



REF: Organic Letters, 6(19), 3265-3268; 2004

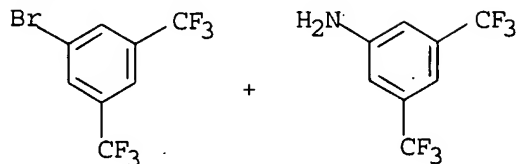
NOTE: 1) microwave irradiation, optimization study, 2) Suzuki coupling, microwave irradiation

CON: STEP(1) 10 minutes, 150 deg C

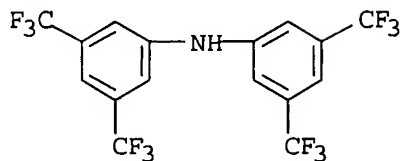
STEP(2) 6 minutes, 150 deg C

L6 ANSWER 35 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(29) OF 55 - 2 STEPS



1. Pd pentadienone,
C:312959-24-3,
NaOBu-t, Dioxane
2. K [N(SiMe₃)₂],
PhMe



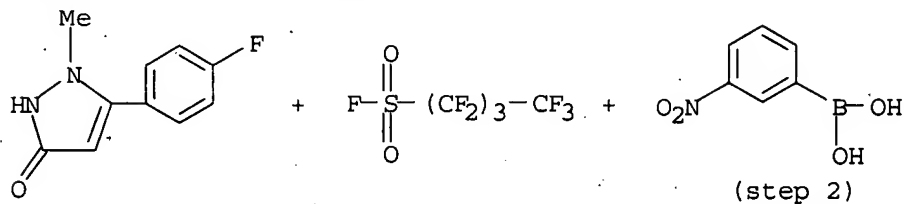
K
93%

REF: Journal of the American Chemical Society, 126(17), 5344-5345;
2004

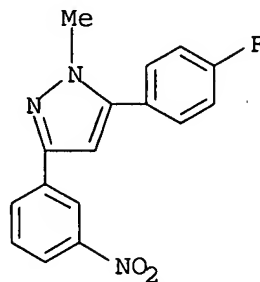
CON: STEP(1) 21.5 hours, 80 deg C
STEP(2) 3 hours, room temperature

L6 . ANSWER 36 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(38) OF 100 - 2 STEPS



1.1. (Me₃Si)₂N.Na,
THF
1.3. HCl, Water
2. Pd(PPh₃)₄, Na₂CO₃,
DMF



10%

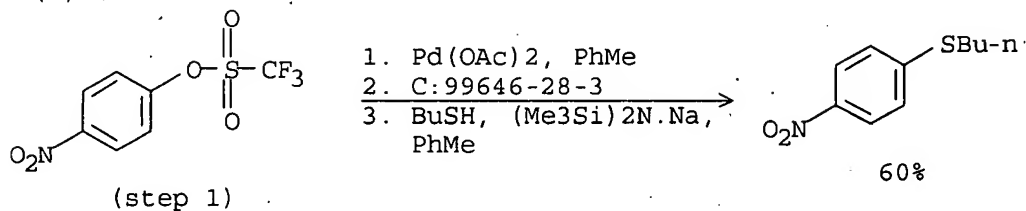
REF: Synlett, (5), 795-798; 2004

NOTE: 2) Suzuki reaction

CON: STEP(1.1) 5 minutes, 0 deg C
STEP(1.2) 2 - 4 hours, 0 deg C -> room temperature
STEP(1.3) room temperature
STEP(2) 18 hours, 100 deg C

L6 ANSWER 37 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(8) OF 12



REF: Organic Syntheses, 2002, 79,, 43-51; 2003

CON: STAGE(1) 15 minutes, room temperature

STAGE(2) 15 minutes, room temperature

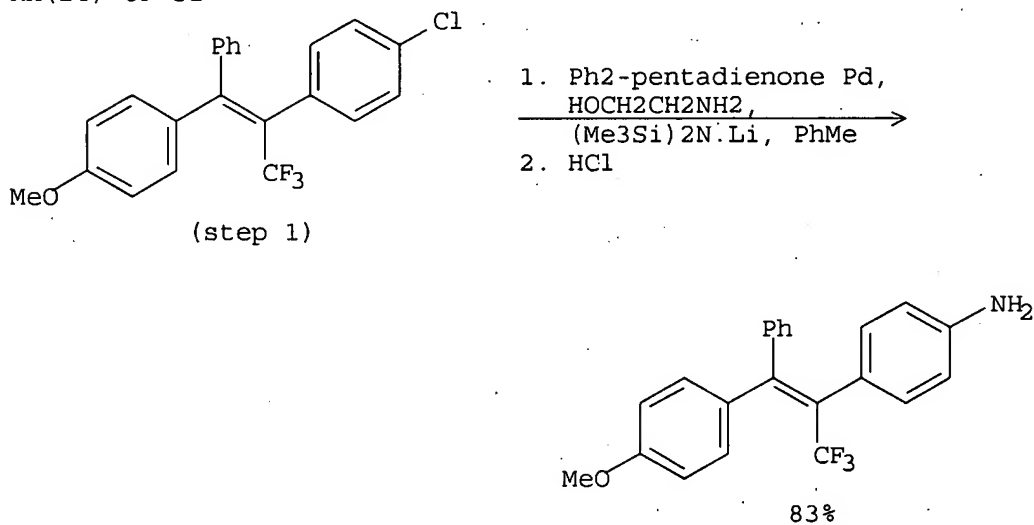
STAGE(3) 3 minutes, 21 deg C; 21 deg C -> 28 deg C;

28 deg C -> 100 deg C; 12 hours, 100 deg C;

100 deg C -> room temperature

L6 ANSWER 38 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(24) OF 51

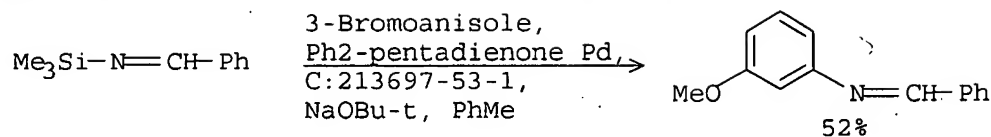


REF: Angewandte Chemie, International Edition, 43(7), 879-882; 2004

CON: 12 hours, 100 deg C

L6 ANSWER 39 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(1) OF 15



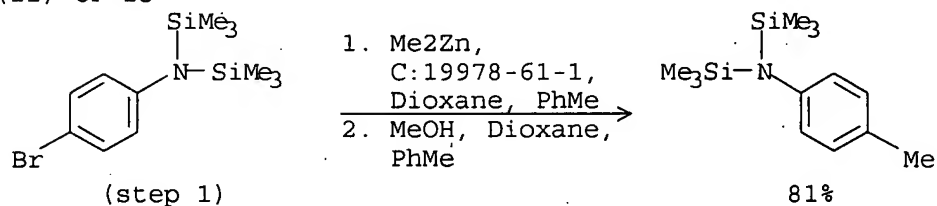
REF: Angewandte Chemie, International Edition, 43(3), 343-345; 2004

NOTE: alternative reaction conditions shown, optimization study, optimized on ligand

CON: 14 hours, 90 deg C

L6 ANSWER 40 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(11) OF 23



REF: Tetrahedron Letters, 45(4), 817-819; 2004

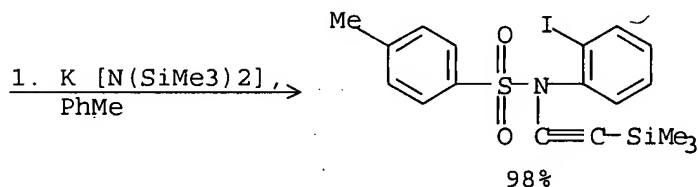
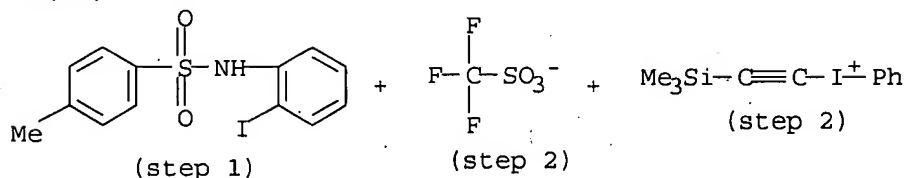
NOTE: Negishi coupling

CON: STAGE(1) 1.5 hours, reflux

STAGE(2) room temperature

L6 ANSWER 41 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(22) OF 72

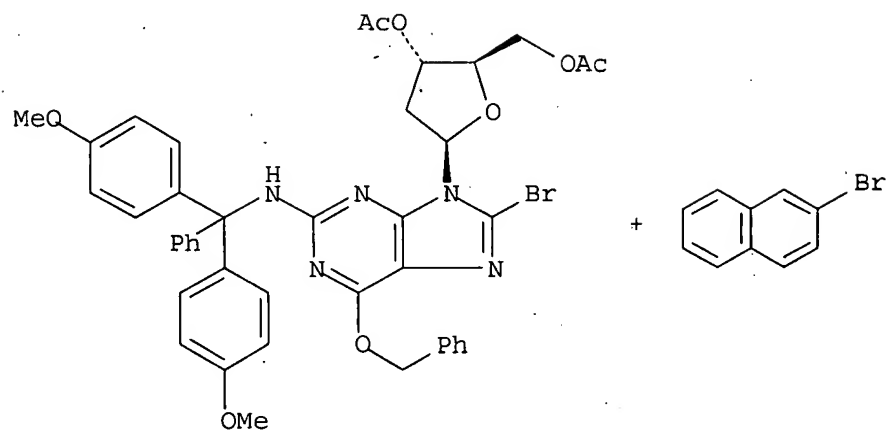


REF: Angewandte Chemie, International Edition, 42(35), 4257-4260; 2003

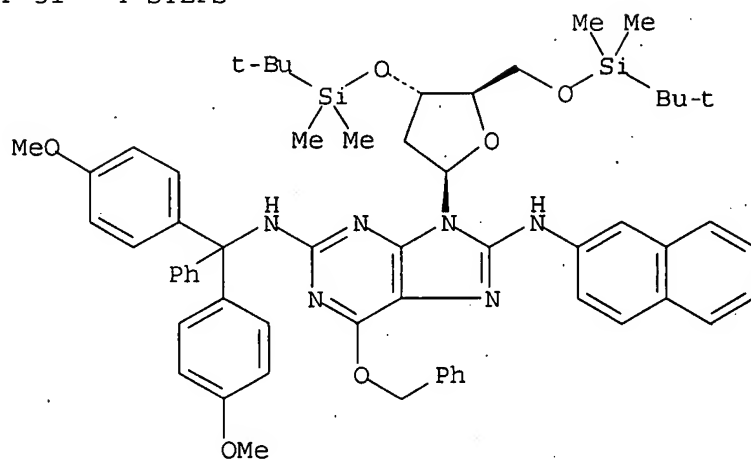
CON: STAGE(2) room temperature

L6 ANSWER 42 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(32) OF 51 - 4 STEPS

3. t-BuSiMe₂Cl

RX(32) OF 51 - 4 STEPS



88%

REF: Tetrahedron Letters, 44(32), 5969-5973; 2003

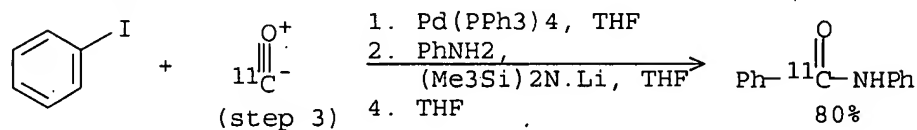
CON: STEP(1.1) 8 hours, 65 deg C; 65 deg C -> room temperature

STEP(2) 0 deg C

STEP(4.1) 2 hours, 100 deg C; 100 deg C -> 25 deg C

L6 ANSWER 43 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(14) OF 30



80%

REF: Organic & Biomolecular Chemistry, 1(3), 541-546; 2003

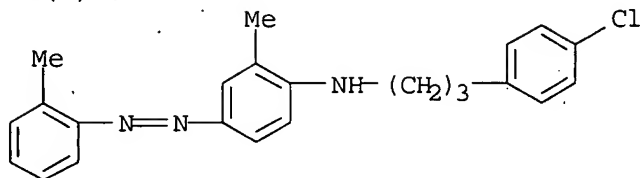
CON: STAGE(1) 1 minute, 70 deg C; 10 - 15 minutes, room temperature

STAGE(2) 10 - 15 minutes, room temperature

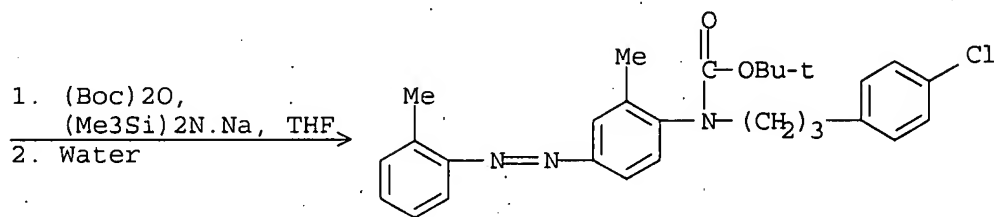
STAGE(3) 5 minutes, 150 deg C

L6 ANSWER 44 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(7) OF 21



(step 1)



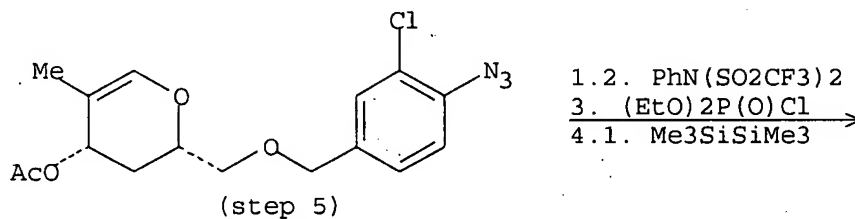
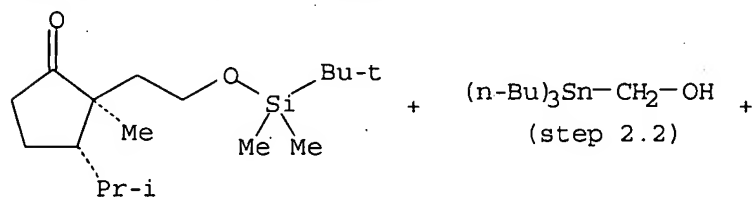
74%

REF: Journal of the American Chemical Society, 125(23), 6977-6985;
2003

CON: 12 hours, 60 deg C

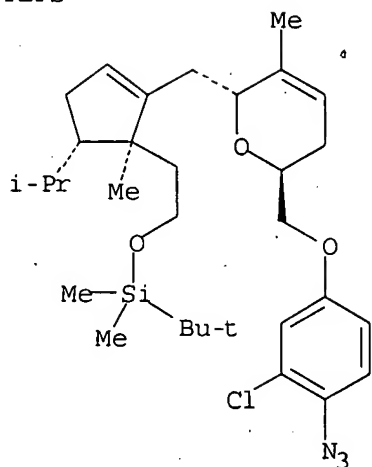
L6 ANSWER 45 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(319) OF 681 - 5 STEPS



1.2. PhN(SO₂CF₃)₂
3. (EtO)₂P(O)Cl
4.1. Me₃SiSiMe₃

RX(319) OF 681 - 5 STEPS



96%

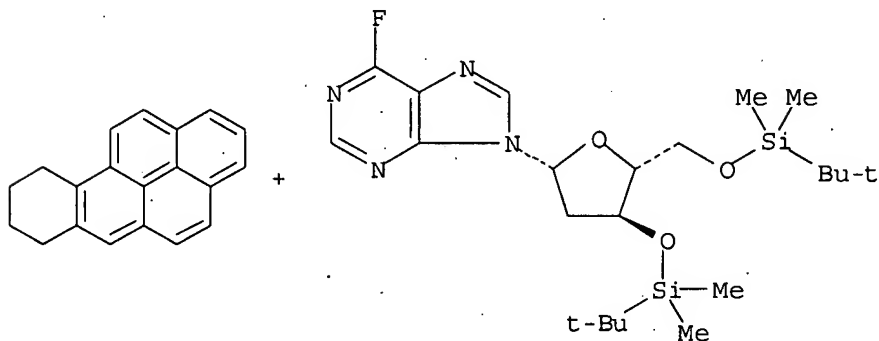
REF: Journal of the American Chemical Society, 125(7), 1843-1850;
2003

NOTE: 2) Stille cross-coupling, 4) stereoselective, 5) stereoselective

CON: STEP(1.1) 1 hour, 0 deg C
STEP(1.2) 4 minutes, 0 deg C; 45 minutes, 0 deg C
STEP(2.1) room temperature -> 70 deg C
STEP(2.2) 8 hours, 70 deg C; 5 hours, 70 deg C
STEP(3.1) 0 deg C; 2 hours
STEP(4.1) 5 minutes, 0 deg C
STEP(4.2) 5 minutes, 0 deg C
STEP(4.3) 0 deg C -> -60 deg C
STEP(4.4) 2 hours, -60 deg C
STEP(4.5) 30 minutes, room temperature
STEP(5) -78 deg C

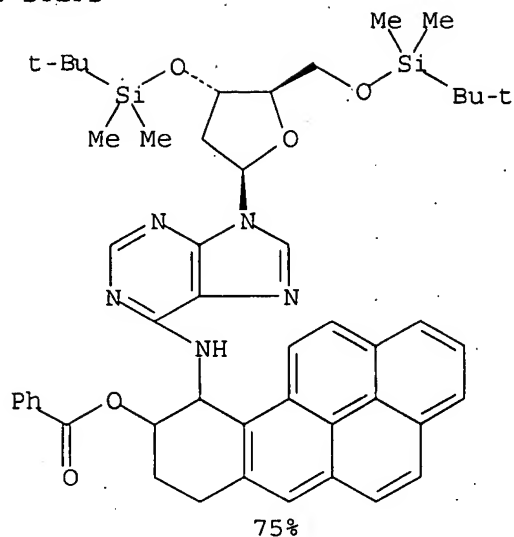
L6 ANSWER 46 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(11) OF 13 - 2 STEPS



1.6. Benzoyl cyanide

RX(11) OF 13 - 2 STEPS



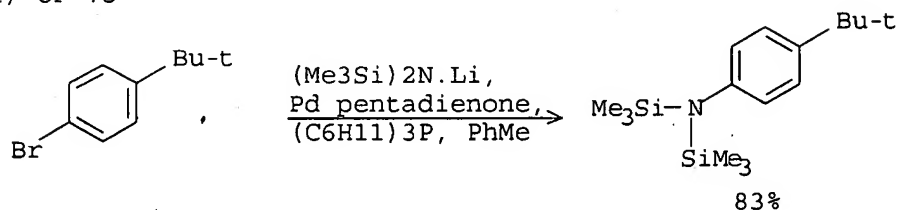
REF: Organic Letters, 5(1), 39-42; 2003

NOTE: 1) stereoselective, 2) stereoselective, isomer mix.

CON: STEP(1.1) 24 hours, room temperature
 STEP(1.2) reflux
 STEP(1.3) 1 hour, 0 deg C
 STEP(1.4) 2.5 hours, 0 deg C
 STEP(1.5) 24 hours, 40 deg C
 STEP(1.6) 20 minutes, room temperature
 STEP(1.7) 2.5 hours, room temperature
 STEP(2) 5.5 hours, 90 - 91 deg C

L6 ANSWER 47 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(1) OF 75



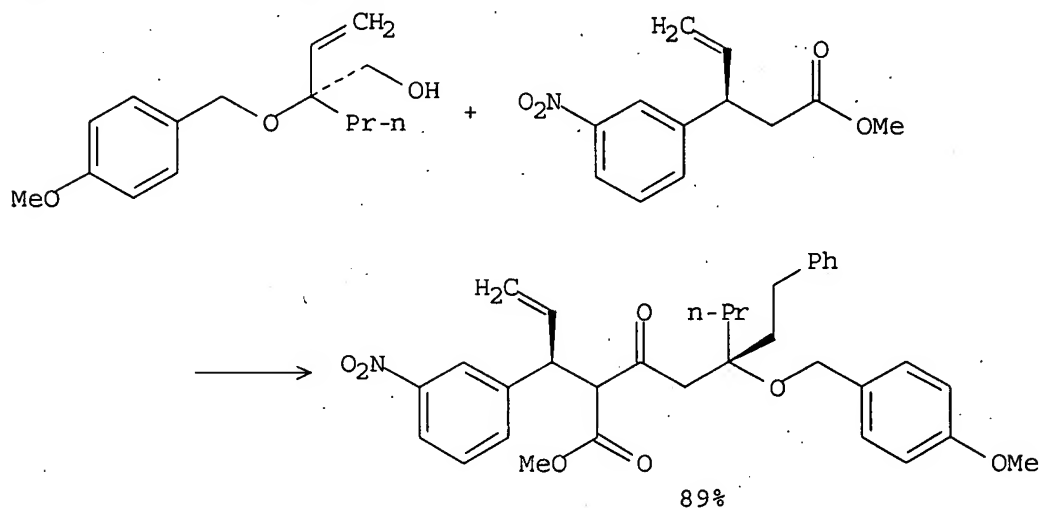
REF: PCT Int. Appl., 2003006420, 23 Jan 2003

NOTE: in-situ generated catalyst, yield depends on temp.

CON: 12 hours, 90 deg C

L6 ANSWER 48 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(57) OF 149 - 5 STEPS

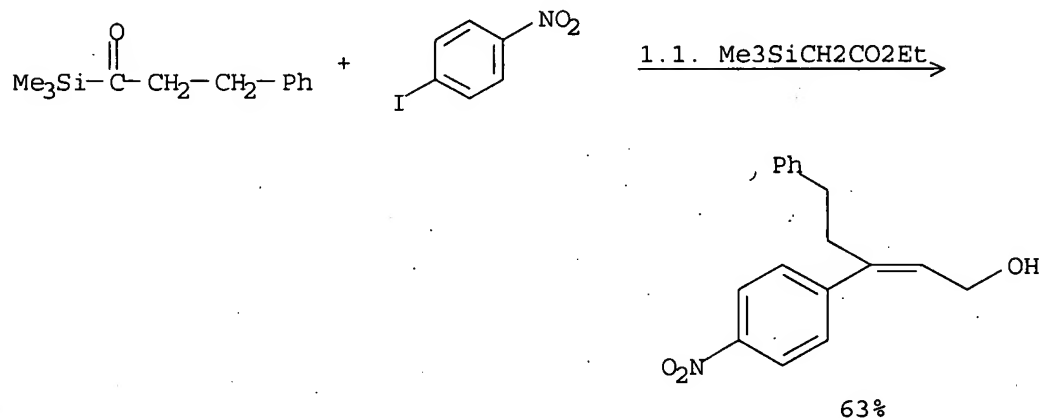


REF: Journal of the American Chemical Society, 124(48), 14320-14321; 2002

NOTE: 1) stereoselective
 CON: STEP(1) reflux
 STEP(2) reflux, 1 atm
 STEP(3.1) 25 deg C
 STEP(3.2) reflux
 STEP(4.1) 25 deg C
 STEP(4.2) 25 deg C
 STEP(4.3) 25 deg C
 STEP(5.1) -78 deg C
 STEP(5.2) -78 deg C
 STEP(5.3) 25 deg C

L6 ANSWER 49 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(88) OF 102 - 3 STEPS



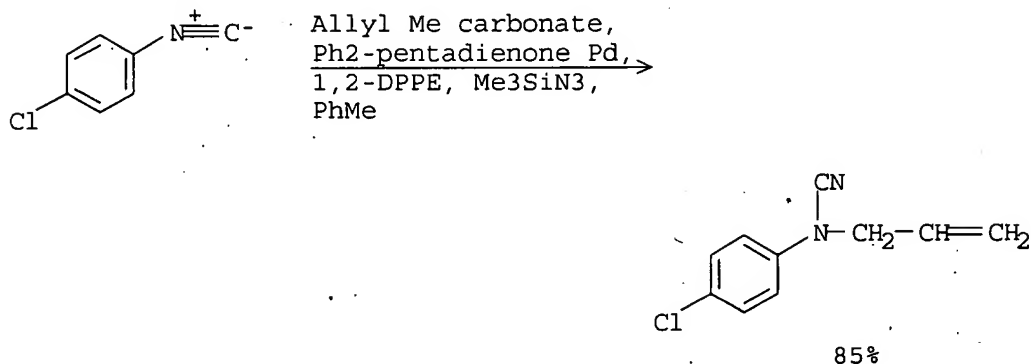
REF: Journal of Organic Chemistry, 67(24), 8450-8456; 2002

CAS ONLINE PRINTOUT

NOTE: 1) stereoselective, 2) stereoselective, 3) stereoselective
 CON: STEP(1.1) 15 minutes, -78 deg C; -78 deg C -> 0 deg C; 4 hours,
 0 deg C
 STEP(2.1) 2 hours, room temperature
 STEP(2.2) room temperature
 STEP(3.1) 20 minutes, room temperature; 2 hours,
 room temperature
 STEP(3.2) room temperature
 STEP(3.3) 2 hours, room temperature
 STEP(3.4) room temperature

L6 ANSWER 50 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(10) OF 70

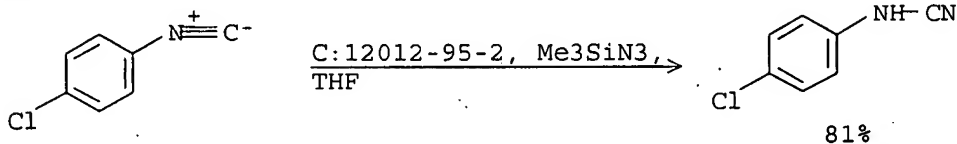


REF: Journal of the American Chemical Society, 124(40), 11940-11945;
 2002

NOTE: anaerobic, reaction temp. must be about 40C

L6 ANSWER 51 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

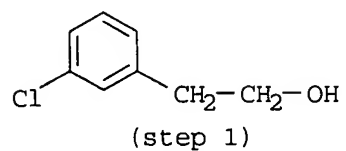
RX(22) OF 50



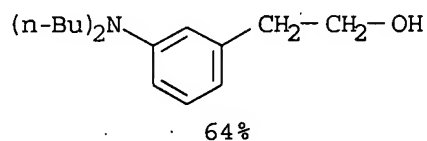
REF: Angewandte Chemie, International Edition, 41(10), 1780-1782;
 2002

L6 ANSWER 52 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(1) OF 19



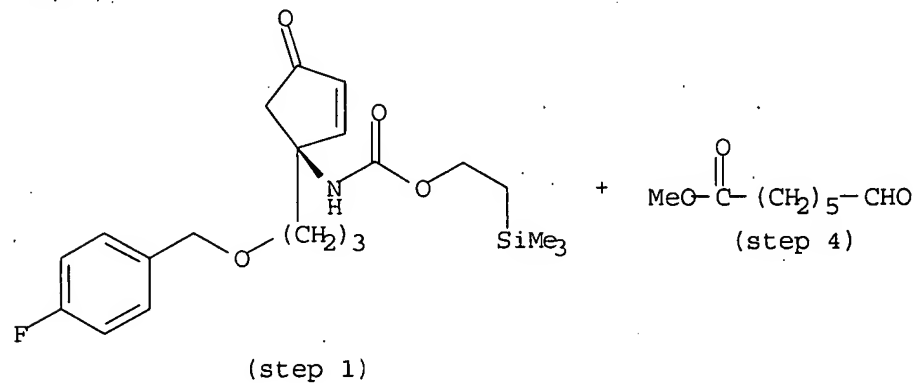
1. Bu₂NH₂,
Ph₂-pentadienone Pd,
C:213697-53-1,
(Me₃Si)₂N.Li, THF
2. HCl, Water
3. NaHCO₃, Water



REF: Organic Letters, 4(17), 2885-2888; 2002

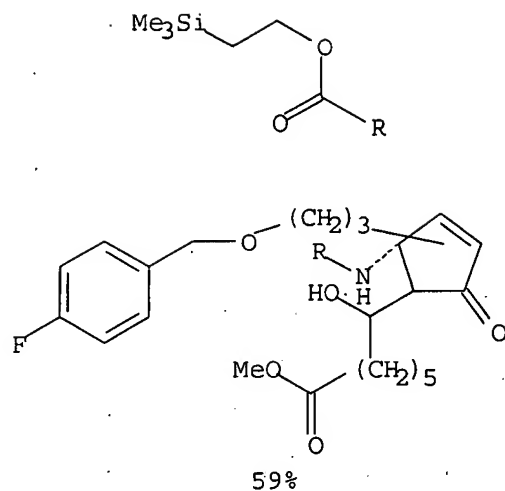
L6 ANSWER 53 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(21) OF 213



1. THF
2. (Me₃Si)₂NH, THF
3. BuLi, Hexane
4. THF
5. AcOH, Water, THF
6. NaHCO₃, Water

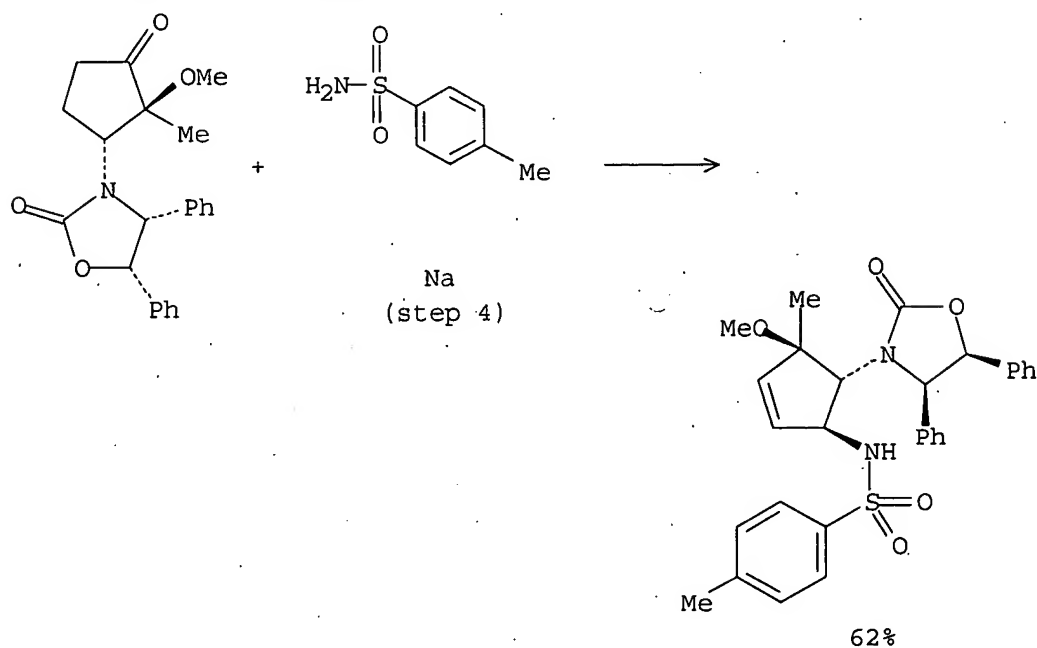
RX(21) OF 213



REF: Journal of Organic Chemistry, 67(13), 4399-4406; 2002
 NOTE: stereoselective, isomer mix.

L6 ANSWER 54 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

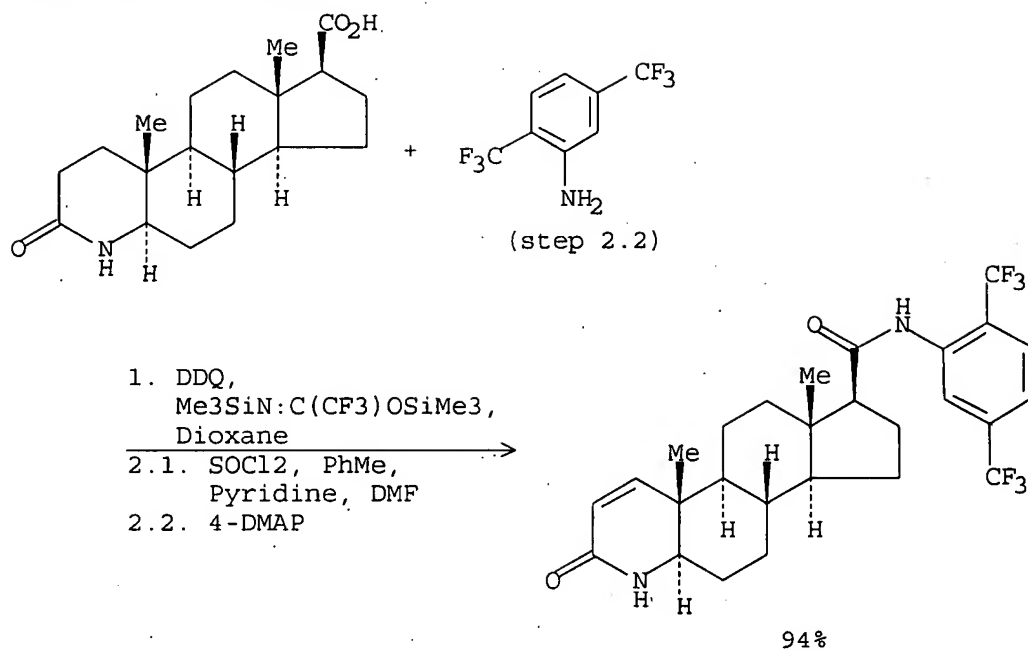
RX(85) OF 113 - 4 STEPS



REF: Journal of Organic Chemistry, 67(11), 3788-3795; 2002
 NOTE: 2) stereoselective, 4) stereoselective

L6 ANSWER 55 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

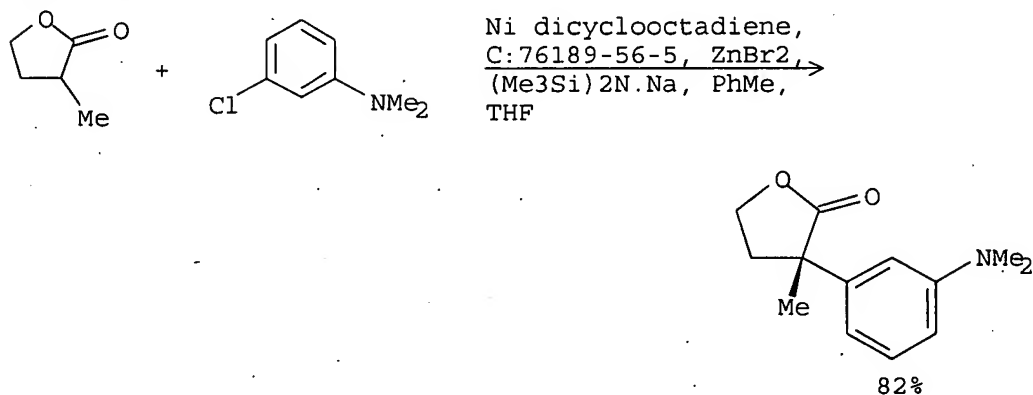
RX(5) OF 6 - 2 STEPS



REF: PCT Int. Appl., 2002046207, 13 Jun 2002

L6 ANSWER 56 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(7) OF 22

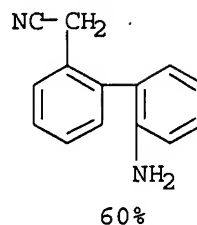
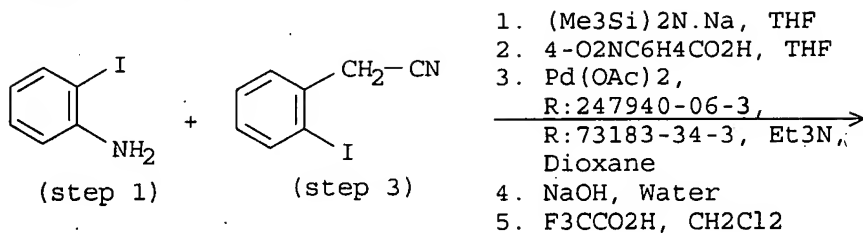


REF: Journal of the American Chemical Society, 124(14), 3500-3501; 2002

NOTE: stereoselective

L6 ANSWER 57 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(26) OF 53

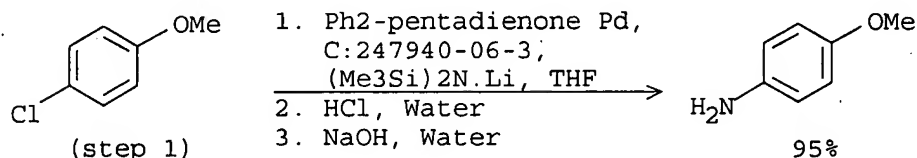


REF: Journal of Organic Chemistry, 67(4), 1199-1207; 2002

NOTE: solid-supported reaction, first stage is attachment to Wang resin, alternative preparation shown, Suzuki coupling

L6 ANSWER 58 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

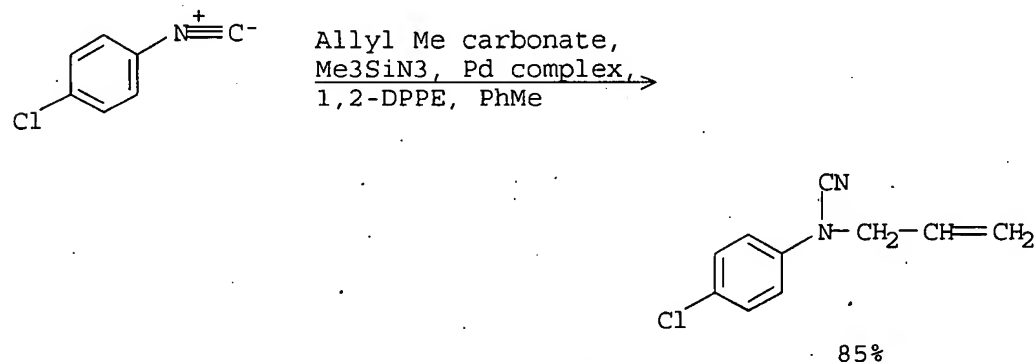
RX(1) OF 18



REF: Organic Letters, 3(21), 3417-3419; 2001

L6 ANSWER 59 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

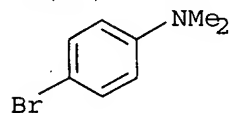
RX(5) OF 10



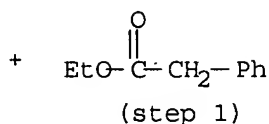
REF: Journal of the American Chemical Society, 123(38), 9453-9454; 2001

L6 ANSWER 60 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

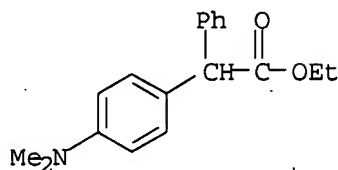
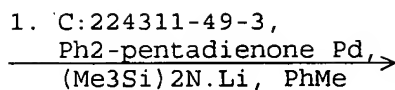
RX(23) OF 29



(step 2)



(step 1)



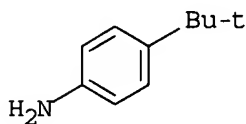
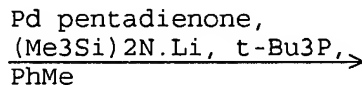
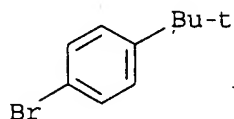
90%

REF: Journal of the American Chemical Society, 123(33), 7996-8002; 2001

NOTE: catalyst generated in-situ, alternative reaction conditions gave lower yield

L6 ANSWER 61 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(1) OF 23

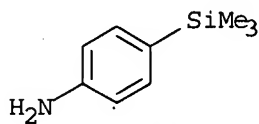
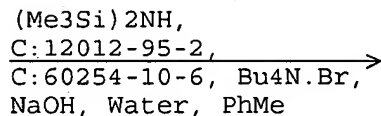
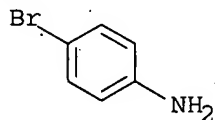


90%

REF: Organic Letters, 3(17), 2729-2732; 2001

L6 ANSWER 62 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(4) OF 14

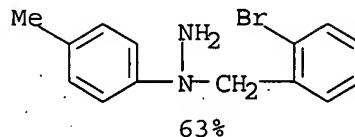
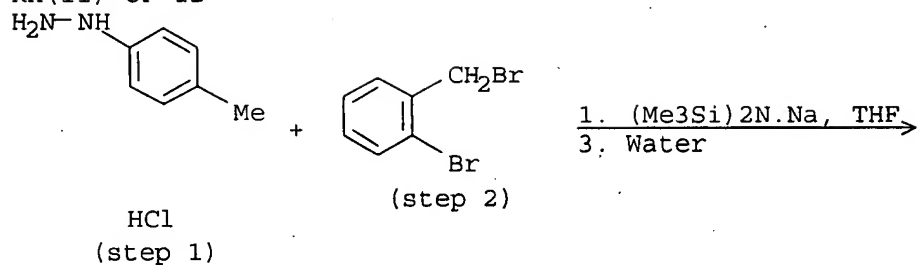


92%

REF: Chemical Communications (Cambridge), (19), 1895-1896; 2000

L6 ANSWER 63 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(11) OF 12

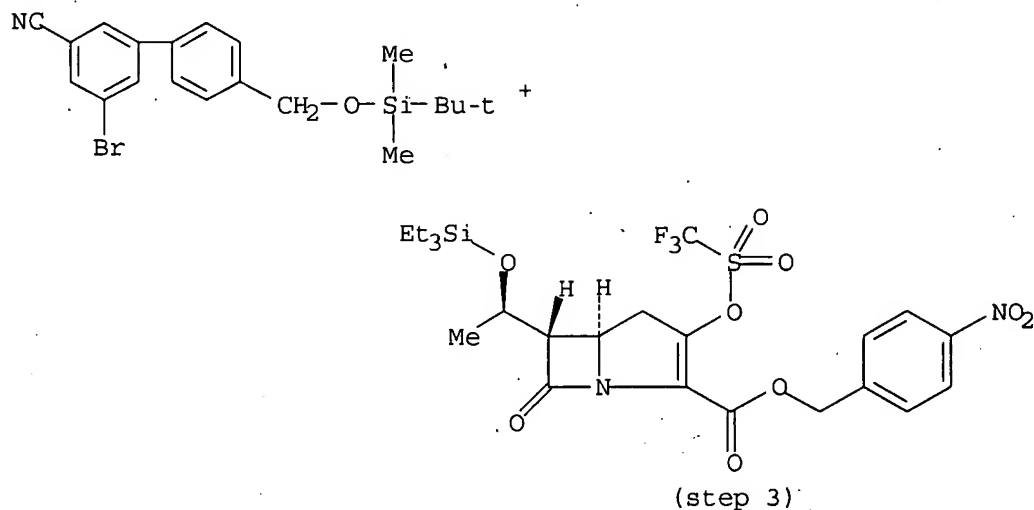


REF: Organic Letters, 2(4), 519-521; 2000

NOTE: other reactants similarly prepd.

L6 ANSWER 64 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

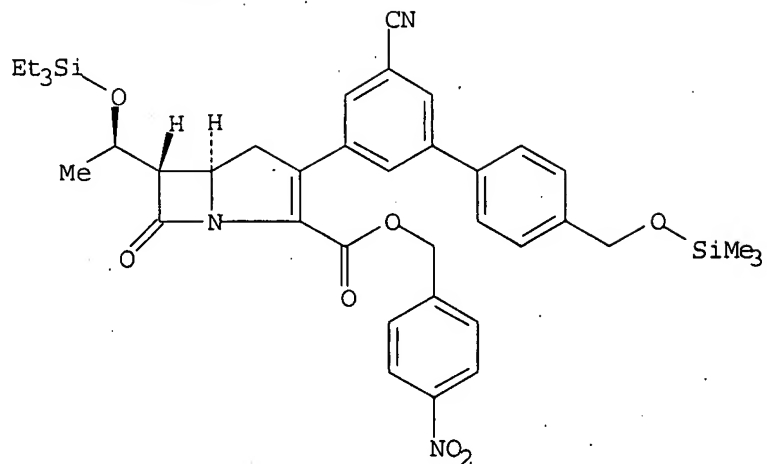
RX(32) OF 50 - 3 STEPS



RX(32) OF 50 - 3 STEPS

- 1.1. R:5419-55-6, THF, PhMe
- 1.2. BuLi, Hexane
- 1.3. H₂SO₄, Water
2. Me₃SiN:CMeOSiMe₃, THF
3. Pd pentadienone, KOH, PhMe

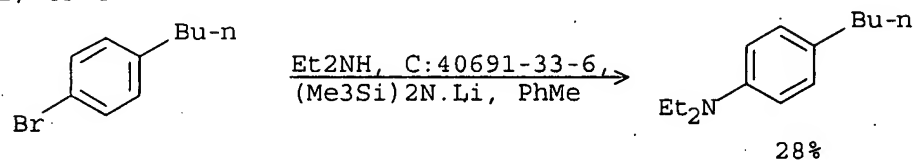
RX(32) OF 50 - 3 STEPS



REF: PCT Int. Appl., 9531461, 23 Nov 1995
NOTE: 3) key step

L6 ANSWER 65 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

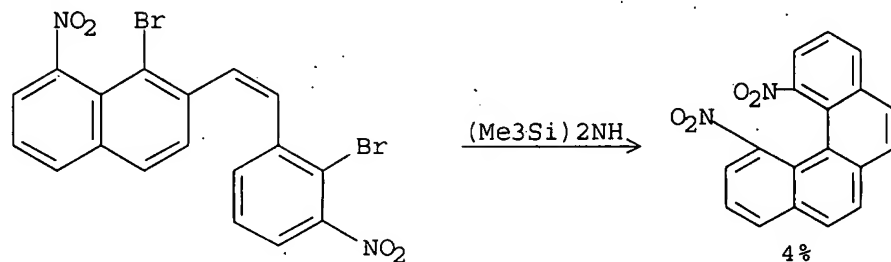
RX(2) OF 4



REF: Tetrahedron Letters, 36(21), 3609-12; 1995

L6 ANSWER 66 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

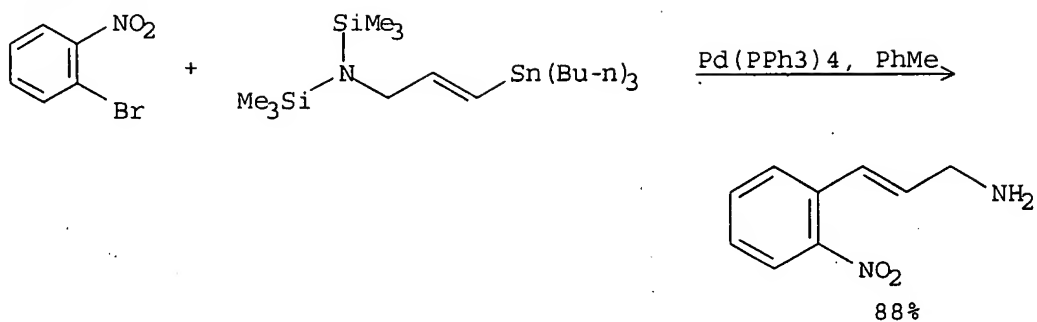
RX(2) OF 7



REF: Tetrahedron Letters, 36(17), 2967-70; 1995
NOTE: TETRAKIS(TRIPHENYLPHOSPHINE)PALLADIUM(0)

L6 ANSWER 67 OF 68 CASREACT COPYRIGHT 2007 ACS on STN

RX(6) OF 51

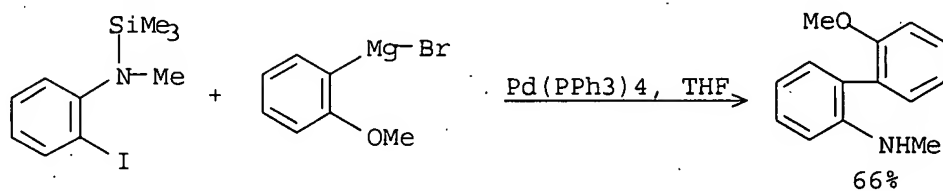


REF: Bulletin de la Societe Chimique de France, 130(3), 273-80; 1993

NOTE: stereoselective

L6 ANSWER 68 OF 68 .CASREACT COPYRIGHT 2007 ACS on STN

RX(4) OF 12



REF: Tetrahedron, 42(7), 2111-16; 1986

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